

Index to Mechanical Engineering

Volume 61, January—December, 1939

(A) denotes Briefing the Record; (BR), Book Review; (C), Correspondence; (Ed), Editorial

ACCIDENTS. *See Safety.*

ADHESION
Coefficient of, on rails..... 583

ADHESIVES, INDUSTRIAL (A)..... 467

ADKINS, W. K.
Industrial-evaporator design, application, and operation (C)..... 241

AERONAUTICS. *See also Aviation.*
Progress report of Aeronautic Division..... 150

Research in (Ed)..... 106

AERONAUTICS AND NATIONAL DEFENSE..... 523

AIR
Sampling impurities in (A)..... 468

AIR BRAKES
Brake-system development..... 583, 657

AIR CONDITIONING
Conference on..... 769

Effects of, on the body..... 9

Physiological response to (abstract)..... 141

Systems using calcium chloride (A)..... 613

Texas A. & M. gives course..... 772

Windowless factory (A)..... 615

AIR HYGIENE FOUNDATION
Sampling air impurities (A)..... 468

AIR LINES
Transoceanic..... 154

AIR NAVIGATION
Instrument aids to..... 154

AIR PREHEATERS
Ljungstrom type..... 507

Use of, for burning wood waste..... 118

AIR PROPELLERS
Made of wood and plastic (A)..... 232

AIR TRANSPORT
Developments in 1938..... 153

AIRCRAFT. *See also Airplanes, Helicopters.*
Aeronautical research (Ed)..... 106

Aeronautics and national defense..... 523

AIRCRAFT ACCIDENTS (A)..... 471

AIRCRAFT CONFERENCE, N.A.C.A.
Report of..... 492

AIRCRAFT ENGINES. *See Engines.*

AIRCRAFT INSTRUMENTS
Aids to navigation..... 154

Automatic direction finder (A)..... 229

Flightray (A)..... 230

AIRPLANE ENGINES. *See Engines.*

AIRPLANES
Developments in design in 1938..... 151

Duramoid used for (A)..... 546

Floating-lift airplane (A)..... 921

Rules relaxed for export of military planes

Tailless monoplane (A)..... 394

Transatlantic air transport with particu-

lar reference to flying boats (abstract).

Value of, as military weapons..... 274

AIRPORTS
La Guardia Field (A)..... 917

ALCOA
Light-reflecting material (A)..... 389

ALFORD, L. P.
Design and shop practice (BR)..... 79

Science of production organization (BR)..... 172

ALLEN, HERBERT
Control equipment for high-pressure oil

and gas wells..... 725

ALLOYS
Use of, in cast iron..... 457

ALNICO
Use of, in flowmeters..... 20

ALSIFILM
New transparent film material (A)..... 384

ALZAK PROCESS
For aluminum reflectors..... 139

AMERICAN ASSOCIATION FOR THE ADVANCE-

MENT OF SCIENCE
Annual winter convention..... 155

AMERICAN ASSOCIATION OF SCIENCE WORKERS

Founding of..... 155

AMERICAN CONFERENCE ON NATIONAL DE-

ENSE
Meeting of..... 381

AMERICAN COORDINATING COMMITTEE ON

CORROSION...... 336

ISSUE	PAGE NUMBERS
January	1-102
February	103-190
March	191-268
April	269-342
May	343-424
June	425-498
July	499-570
August	571-640
September	641-704
October	705-776
November	777-858
December	859-948

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (continued)

Constitutional amendments approved..... 944

Council
Meeting (December, 1938)..... 41, 88

New members for 1939..... 42

Report for 1938..... 59

Report on recommendations of Local Sections national delegates (Ed) 428, 485

Council Executive Committee
Actions of..... 181, 560, 633

Authorizes committee on depreciation..... 181

Design committee, a correction..... 186

Finance Committee report (1938)..... 66

Summary..... 69

Fuels Division
Joint meeting with A.I.M.E., Columbus, Ohio..... 491, 695, 765, 848

Service to members broadened..... 253

Will supply speakers to Sections..... 180

Heat Transfer Group
Organizes committees..... 253

Honorary Members
Selection procedure..... 89

Honors of. *See Honors and Awards.*

Hydraulic Division
Part in Hydrologic Union meeting..... 628

Interview facilities for members..... 424

Junior Members
Activities..... 94, 181, 257, 331, 414, 490, 697, 769, 850, 938

Objectives of Metropolitan group (C)..... 478

Local Sections
By-laws amended..... 91

Group conferences..... 768

Group Delegates Conference..... 43

Group delegates headed..... (Ed) 428, 485

News of. 85, 179, 255, 329, 412, 488, 936

Philadelphia Section sponsors cooperation between army and manufacturers..... 85

Publicity for..... 849

Local Sections Committee
Recommendations to Council..... 84

Machine Shop Practice Division
Cleveland meeting..... 696, 764, 336

Management Division
Advisory committee formed..... 564

Co-sponsor of Stevens economics conference..... 253

Committees in management conference..... 633

Objectives formulated..... 561, 633

Mid-Continent secretary of..... 633

National Defense Group
Takes interest poll..... 493

Map of Sections, Branches, and Groups..... 62

Materials Handling Division notes..... 336

Medals of. *See Honors and Awards.*

Meetings, National
Annual Meeting (1938)..... 40

Movies of, available..... 180

Annual Meeting (1939), Philadelphia..... 762, 841, 931

Fall Meeting (1939). *See British American Engineering Congress.*

Semi-Annual Meeting (1939), San Francisco..... 252, 328, 407, 479, 558, 634

Spring Meeting (1939), New Orleans..... 82, 174, 325

Meetings, Sections
..... 254, 327, 329, 486, 768, 849

Members, deaths reported..... 102, 190, 268, 342, 498, 570, 704, 776, 858, 948

Membership List
1940 edition to have two new features..... 854

Membership statistics..... 61

Nominating committee
Solicits suggestions..... 178

Will be in session at Annual Meeting..... 944

Officers for 1940..... 561, 629, 848

Oil and Gas Power Division
National meeting at Ann Arbor..... 410, 626

Proceedings available..... 942

Parker case..... 61, 181, 847

Petroleum Division
Meeting at Norman, Okla..... 764, 942

Notes..... 336

Overton, W. J., appointed secretary..... 942

Prizes of. *See Honors and Awards.*

Professional Divisions
Conference at Annual Meeting..... 44

Conference of representatives..... 491

Members may join..... 338

Publications
"Back talk" (C)..... 622

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (continued)
Publications (continued)

- For and against (C)..... 759
Handling of technical papers (Ed)..... 501
Opinions asked on economic reviews..... 493
Preprints of papers (Ed)..... 501
Regulation Group meets..... 561
San Francisco tour..... 252, 408, 636
Sixtieth Anniversary plans..... 84
Student Branches
 Activities and news..... 94, 182, 258, 332, 415, 698, 770, 851
Student Group meetings (1939)..... 335
Student Guidance Committee work..... 772
Textile Division notes..... 336, 410, 412
Tour to San Francisco..... 252, 408, 636
Wood Industries Division
 Bibliography available on machining of wood.....
 National meeting in Boston..... 693, 764
A.S.M.E. BOILER CODE. *See* Boiler Code.
A.S.M.E. MECHANICAL CATALOG AND DIRECTORY
1940 edition out..... 764
A.S.M.E. NEWS..... 82, 174, 252, 325, 407, 479, 558, 625, 690, 762, 841, 931
A.S.M.E. WOMAN'S AUXILIARY
News of..... 262, 336, 493, 562, 602
Report of..... 57, 90
Rice scholarships established..... 935
Scholarship-fund party..... 856
Student loans..... 493
AMERICAN SOCIETY OF REFRIGERATING ENGINEERS
Annual meeting (1940)..... 944
AMERICAN STANDARDS ASSOCIATION
Advisory committee formed..... 628
Index of standards available..... 419
Officers elected..... 97
Pipe, new standard for (A)..... 33
Standards for vegetables (A)..... 39
AMERICAN SYSTEM
Whichever way (Ed)..... 345
AMES, JOSEPH S.
Presented with N.A.C.A. testimonial (A)..... 917
ANBRO, GOSTA A.
Which fuel to choose?.....
ANTHONY, GARDNER CHACE
Bas-relief of, unveiled.....
ANTHRACITE CONFERENCE
Second, at Lehigh University.....
ANTIMONOPOLY INVESTIGATION. *See* Temporary National Economic Committee.
APPRENTICESHIP
Cost of (C)..... 394
ARENBERG, CONRAD M.
Mechanics of human organization (BR)..... 375
ARGENTINA
Technical and economic aspects of..... 599
ARMOR PLATE
Requirements of, for tanks..... 17
ARMSTRONG, FLOYD E.
Extra-tariff control of foreign trade (BR)..... 790
ARMY AVIATION
Army Air Corps..... 678
ARMY ORDNANCE
America looks to her guns.....
Development, status, and manufacture of tanks..... 13
High-explosive bombs (A)..... 749
Place of Diesel engine in our national defense..... 799
U. S. semiautomatic rifle (A)..... 235
AROCHLOR
Liquid used in solar-heat devices (A)..... 389
ASH, PULVERIZED-COAL. *See* Fly Ash.
ASSOCIATION OF IRON AND STEEL ENGINEERS
Pittsburgh meeting..... 696
ATOM SMASHERS
Electrostatic generator and cyclotron (A)..... 163
ATOMIC ENERGY
Energy from matter (A)..... 754
AUSTEMPERING. *See* Heat-Treatment.
AUTOMOBILE DRIVING
Danger units (A)..... 385
AUTOMOBILE HEADLIGHTS
Sealed-beam lamps (A)..... 833
AUTOMOBILE SHOW (A)..... 916
AUTOMOBILE SPEED RECORD (A)..... 749
AUTOMOBILE TIRES
Tread design, tests..... 125
AUTOMOBILES. *See also* Motor Vehicles.
Hydra-matic transmission (A)..... 922
Paint baking with infrared rays (A)..... 468
Rear-engined Volkswagen (A)..... 311
Rubber-tire clutch (A)..... 918

- AUTOMOTIVE CONGRESS**..... 328, 493, 542
AVIATION. *See also* Army Aviation.
Pilots and airports in U. S. (A)..... 681
AWARDS. *See* Honors and Awards.

B

- BABBITT CENTENARY**..... 679
BAILEY, E. G.
 Power and fuel..... 581
BALL BEARINGS
 Machine-tool-spindle analysis..... 813
BALLESTER, RODOLFO E.
 Fifth Calvin W. Rice lecturer..... 559
 Some technical and economic aspects of the Argentine..... 599
BARISH, THOMAS
 New method of machine-tool-spindle analysis..... 813
BARNES, C. A.
 Some aspects of combustion in small underfeed stokers (A)..... 682
BARSTOW, WILLIAM S. Dinner in honor of..... 541
BARTH, CARL G. Death of..... 918
BARTOE, W. F.
 Service-temperature flow characteristics of thermoplastics..... 892
BEAN, HOWARD S.
 Influence of steam-flow metering equipment on piping design (C)..... 537
BEARINGS. *See also* Ball Bearings.
 Lubrication of high-speed Diesels. Bearing strength, temperature relations, corrosion as a function of temperature..... 356
BEGEMAN, M. L.
 Hard-surfacing processes and materials (C)..... 397
BENDS
 Use of helium for treatment of..... 112
BENSON BOILERS. *See* Boilers.
BERRY, C. HAROLD
 Smoke-density measurements (C)..... 71
BEST MEN ARE NEEDED (Ed.)..... 346
BIBLIOGRAPHIES
 Coal hydrogenation..... 611
 Fourneyron's writings..... 301
 Frozen foods..... 442
 Metal cutting..... 378
 Rural industries..... 442
 Stress, combined, effects of..... 111
 Tests of materials under combined stresses..... 111
 Timber construction..... 798
 Wood..... 798
BIGELOW, L. G. E.
 Mid-Continent secretary of A.S.M.E. 633
BLAKESLEE, H. R.
 Old mill wheel (C)..... 321
BLAST FURNACES
 Blowers driven by gas turbines..... 649
BLUNT, J. G.
 Electric locomotives (C)..... 472
BOCHET, MARCEL
 Internal-combustion-engine design in Europe..... 525
BOEHM, W. H.
 Honored by Boiler Code Committee..... 484
BOILER CODE
 Interpretations..... 78, 170, 250, 397, 623, 687, 838
 Revisions and addenda..... 77, 170, 321, 398, 553, 930
 Stainless steel in unfired pressure vessels..... 553
BOILER CONTROLS. *See* Controls.
BOILER CORROSION
 In partially dry steam-generating tubes..... 199
BOILER EMBRITTLEMENT. *See* Water Conditioning.
BOILER FURNACES
 Design trends..... 581
 For combustion of wood waste..... 120
 Photographic study of operation of..... 729
BOILER INSPECTION
 Measuring thickness of metal from one surface (A)..... 231
BOILER INSURANCE (A)..... 750
BOILER SCALE
 Sodium-aluminum-silicate scale..... 719
BOILER TUBES
 Corrosion in..... 199
 Cracking of tube ends..... 715
 Creep in tubular pressure vessels (C)..... 757
 Material for, in Benson boilers..... 221
BOILER-WATER TREATMENT. *See* Water Conditioning.

- BOILERS**
 Benson boilers. Advantages of..... 294
 On German ships..... 221
 Typical installations of..... 287
 Cleaning new boilers..... 718
 Design trends..... 581
 Die Dampfkessel (BR)..... 247
 Equipment for U. S. merchant marine..... 203
 Locomotive with Velox boiler..... 867
 Rotative boiler turbine (A)..... 835
 Solar-heat (A)..... 388
 Steamotive boiler..... 712
 Wood-waste..... 120
BOOK REVIEWS
 An engineer's miscellany..... 172
 Applied economics for engineers..... 928
 By-products of E.C.P.D. 912
 Clash of progress and security..... 463
 Debt and recovery..... 28
 Die Dampfkessel..... 247
 Economics of business enterprise..... 535
 Engineering and civilization..... 323
 Floor under wages: British style..... 676
 Functions of the executive..... 375
 Industrial price policies and economic progress..... 226, 392, (C) 394
 Internal-combustion engine..... 402
 Invisible tariff..... 790
 Kent's mechanical engineers' handbook..... 79
 Leadership in a free society..... 580
 Medicolegal phases of occupational diseases..... 759
 National Labor Relations Act..... 740
 New Callendar steam tables..... 839
 Present status and trends in engineering education in the United States..... 912
 Promises men live by..... 27
 Saving and investment in the American enterprise system..... 907
 Science of production organization..... 172
 Short history of the steam engine..... 323
 Towards industrial peace in Australia..... 148
 Trade associations in law and business..... 80
 Uninvested savings..... 907
 Vapor charts..... 840
BOOKS RECEIVED..... 81, 173, 248, 324, 402, 555, 623, 687, 760, 929
BRADBURY, T. A.
 Boiler-water treatment..... 142
BRAINS. No monopoly of (Ed)..... 502
BRAKES
 Braking high-speed trains..... 583, 657
 Canadian mine hoists..... 885
 Regenerative braking (A)..... 685
BRAY, CHARLES W. Fifty-Year Member.. 50
BRIDGMAN, P. W.
 Assistance to totalitarian states..... 309
 Considerations on rupture under triaxial stress..... 107, (C) 477
BRITISH AMERICAN ENGINEERING CONGRESS 482, (Ed) 501, 563, 625, 690, 766
BRITISH VISIT US (Ed)..... 501
BROOKS, J. ANSEL
 Scientific management in the small business..... 373
BROWN, DOUGLASS V.
 A floor under wages: British style (BR)..... 676
BROWN, HYLTON R.
 Control of dust explosions in industrial plants (C)..... 321
BROWN, LEWIS H.
 Presented with Vermilye Medal (A).... 917
BRUCE, A. K.
 Present position of heavy-oil and gas engines in Great Britain..... 429
BUCHI, ALFRED J.
 Personal reflections on forty years of Diesel-engine development..... 213
BUILDING MATERIALS
 Cottrell block (C)..... 476
 Fellowship founded at Mellon Institute.. 264
 Fly-ash concrete (C)..... 475
 Mineral wool (A)..... 384
 National Bureau of Standards bulletins on structural elements (A)..... 166
BULLARD, J. E.
 Industry, labor, and the public (C)..... 244
BUMGARDNER, H. E.
 Smoke-density measurements (C)..... 71
BURCHARD, JOHN ELY
 Economic factors of housing problem.... 781
BURNERS. *See* Combination Burners, Domestic Furnaces, Oil Burners.
BUSH, VANNEVAR
 The professional spirit in engineering.... 195
BUSINESS
 Economics of business enterprise (BR).... 535
BUTZLER, E. W.
 Industrial-evaporators (C)..... 240
BYRNE, JOSEPH M., JR.
 Engineer in public service..... 742

C

- CAIN, B. S.**
Design of Union Pacific steam-electric locomotive..... 709, 817
Electric locomotives (C)..... 474
- CAPITAL**
Government spending and economic recovery (BR)..... 307
Required by jobs (A)..... 156
- CAPITAL GOODS**
And the American enterprise system (A)..... 381
- CAR WHEELS.** *See* Wheels.
- CARBON DIOXIDE**
Dry ice from natural gas (A)..... 234
Dry ice helps fit thrust collars..... 681
- CARRY-OVER.** *See* Steam Quality.
- CAST IRON**
Properties, alloys, heat-treatment, specifications, uses..... 455
- CATAMARANS**
Twin ships (A)..... 310
- CEMENTED CARBIDES**
Brazing of (A)..... 388
- CEMENTS.** *See* Ahesives.
- CENSUS OF MANUFACTURERS**
Value of products and persons employed by industries contributing to stream pollution..... 360
- CENTRIFUGAL MACHINES**
Applications of (C)..... 758
- CHILLED CAR WHEELS.** *See* Wheels.
- CHRISTIE, ALEXANDER GRAHAM**
Address before Metropolitan Section (A)..... 487
Die Dampfkessel (BR)..... 247
Engineering, definition of..... 156
I.M.E. confers honorary membership on..... 854
More work for engineers (Ed)..... 3
News notes of..... 179, 254, 329, 330, 418, 486, 488, 633, 700, 844, 848, 935, 938, 939, 941
President, A.S.M.E. 2
Smoke-density measurements (C)..... 72
- CHRISTMAN, JOHN K.**
Manufacture of high-speed tanks..... 13
- CHRISTY, WILLIAM G.**
Smoke-density measurements (C)..... 72
- CHROMIUM**
Hard chromium plating (A)..... 830
- CIERVA, JUAN DE LA**
Memorial fellowship (Ed)..... 106
- CIRCUIT BREAKERS**
Quick-acting release latches..... 807
- CIVIL AERONAUTICS AUTHORITY**
Aeronautical research (Ed)..... 106
- CIVIL SERVICE**
Federal public hearing on..... 943
National committee appointed..... 263
President's Committee appoints engineering committees.....
- CLARK, DONALD S.**
Hard-surfacing processes and materials (C)..... 395
- CLOSE, GUY C., JR.**
Legible blueprints (C)..... 551
- CLUTCHES**
Rubber-tire clutch (A)..... 918
- COAL.** *See also* Anthracite Conference.
Analyses of the Pittsburgh bed..... 609
- COAL, BITUMINOUS**
Downdraft conversion burner for domestic furnaces..... 278
Program of research on..... 419
- COAL HYDROGENATION**
Bureau of Mines experimental plant..... 605
- COAL-MINE SEALING**
Status of, in U.S. 363
- COAL MINES**
Industrial wastes..... 364
- COAL TREATMENT**
Report available on oil treatment of coal (A)..... 681
- COBURN, JAMES M.**
Development in air transport..... 153
- CODES.** *See also* Standards.
Code on Definitions and Values
Proposed revision available..... 846
- Compressed-Air Safety Code available... 264
- Test Code for Dust-Separating Apparatus..... 767
- Test Code on Steam Turbines
Proposed revisions available..... 846
- COLUMBIA UNIVERSITY**
Birthday of School of Engineering (Ed).... 862
- COMBINATION BURNERS**
Installation in De Florez furnaces..... 507

- COMBUSTION.** *See also* Flue Gas.
At constant volume. French symposium papers available..... 264
- Downdraft conversion burner for domestic furnaces..... 278
- Oil-burning orchard heaters..... 445
- Wood-waste fuels; air preheating, fuel drying, feeding..... 115, (C) 620
- COMBUSTION CONTROL**
Automatic control for boilers..... 588
- Automatic steam control for steam-electric locomotive..... 713
- De Florez furnaces..... 509
- COMPREG**
Wood-plastic for propeller blades (A)..... 232
- CONCRETE, FLY-ASH**
Properties of (C)..... 476
- CONDIT, KENNETH H.**
Appointed dean of Princeton School of Engineering (A)..... 917
- Nominated for Vice-President of A.S.M.E. 630
- CONNOLLY, EDWARD W.**
Receives Charles T. Main Award..... 49
- CONSTRUCTION**
Industrial renaissance of the South..... 281
- CONTESTS**
Timber-bridge design..... 264
- CONTROLS**
Automatic steam control for steam-electric locomotive..... 713
- For machine tools (C)..... 245
- CORNELIUS, HENRY R.** Fifty-Year Member..... 50
- CORNELL UNIVERSITY**
Celebration for centennial of birth of Robert Henry Thurston..... 560, 696, (Ed) 780, 934
Expansion program..... 95
- CORPORATIONS**
Paid directors (Ed)..... 346
- CORROSION.** *See also* Boiler Corrosion, Fretting Corrosion.
Comparative corrosion as a function of temperature of babbitt metal and cadmium silver with different lubricating oils..... 358
- Coordinating committee on, formed..... 336
- COSTS**
Committee on cost-price relationships formed..... 420
- COTTONSEED**
Research on processing of..... 131, (C) 618
- COTTRELL BLOCK**
Properties of (C)..... 476
- COUPLINGS**
Improved types needed for ship drives.... 205
- CRANKSHAFTS, SECTIONAL** (A)..... 314
- CRAWFORD, ALBERT BEECHER**
Preprofessional training..... 114
- CREEP OF METALS**
Creep in tubular pressure vessels (C)..... 757
Methods of testing..... 590
Steels, tests and methods (A)..... 314
Variables affecting creep strength..... 593
- CROSSAN, THOMAS E.**
Economics of a power plant for joint utility and industrial service..... 121, (C) 619
- "CRYO-VAC"
Rubber wrapper for foods (A)..... 317
- CUTTING TOOLS.** *See* Tools.
- CYCLOTRON**
Ion accelerator (A)..... 164, 754

D

- DAMPING**
And elasticity in relation to the state of the material (A)..... 231
- DANGER UNITS, AUTOMOBILE DRIVING** (A)..... 385
- DARGAN, W. H.**
Photographic study of steam-boiler furnaces in operation..... 729
- DAUGHERTY, T. H.**
Routing nightmares of water conditioning..... 715
- DAVIES, C. E.**
Southern itinerary..... 257
- DAVIES, PAUL L.**
Organization problems of branch management..... 460
- DAVIS, HARVEY N.**
Unconscious tuition..... 113
- DAVIS, HOWARD LEE**
Young engineer's responsibility to industry..... 136

- DAVIS, RAYMOND E.**
Utilization of pulverized-coal ash (C)..... 475
- DAY BY DAY**
Comments on current events..... 155, 227, 309, 381, 465, 539, 612, 678, 748, 829, 915
- DECLOSTAT**
Wheel-sliding preventer..... 584
- DE FLOREZ FURNACES.** *See* Oil-Still Furnaces.

- DE FOREST, A. V.**
Hard-surfacing process and materials (C)..... 395
Receives Sylvanus Albert Reed Award..... 255

- DEGLER, H. E.**
The internal-combustion engine (BR)..... 402

- DESCALING.** *See* Flame Descaling.

- DESIGNING AND THE DESIGNER** (A)..... 316

- DESUPERHEATING**
Problem of..... 720

- DEVELOPMENT OF NEW PRODUCTS**..... 661

- DICK, G. M.**
Canadian mine hoists..... 885

- DIESEL ENGINES.** *See* Engines.

- DIESEL FUEL.** *See* Fuel.
- DIESEL RAIL CARS**
Controls for (A)..... 33
In Great Britain..... 433

- DIESEL, RUDOLF**
Recollections of..... 215

- DIRECT ROLLING.** *See* Metal Rolling.

- DIRECTION FINDERS.** *See* Aircraft Instruments.

- DOTHERT, ROBERT E.**
Social responsibility of the engineer..... 653

- DOMESTIC FURNACES**
Downdraft conversion burner for..... 278

- DOTY, PAUL**
Council resolution on death of..... 42
Tribute (Ed)..... 4

- DRAFTING**
Legible blueprints (C)..... 551

- DREWRY, M. K.**
Corrosion in partially dry steam-generating tubes (C)..... 552

- DREYFUS, EDWIN D.**
Economics of a power plant for joint utility and industrial service (C)..... 620

- DRIERS**
Use of, in combustion of wood waste.... 119

- DRIVES.** *See also* Electric Motors.
Quarter-turn belt drive (C)..... 927

- DRY ICE.** *See* Carbon Dioxide.

- DRYDEN, HUGH L.**
Presents Wright Brothers Lecture..... 97

- DRYERS.** *See* Driers.

- DUNN, GANO**
Appointed to Civil Service Committee... 263
1939 recipient of Hoover Medal..... 854

- DUPO NUMBER**
Ignition quality of Diesel fuels (A)..... 831

- DURAMOLD**
Used for airplanes (A)..... 546

- DURAND, W. F.**
Pelton water wheel..... 447, 511

- DUST**
Sampling air impurities (A)..... 468

- DUST EXPLOSIONS**
Control of (C)..... 320

E

- ECONOMIC PROBLEMS**
Whichever way (Ed)..... 345

- ECONOMIC RECOVERY**
And government spending (BR)..... 307
Day by day..... 381

- ECONOMIC RESEARCH**
Committee on cost-price relationships formed..... 420

- ECONOMICS**
Applied economics for engineers (BR).... 928

- Automobile show (A)..... 916

- Business cycles..... 27

- Capital-goods industries and the Ameri- can enterprise system (A)..... 381

- Economic factors of housing problem.... 781

- Extra-tariff control of foreign trade.... 790

- Government spending and economic re- covery (BR)..... 307

- Industrial and agricultural balance..... 437, (C) 925

- Industrial price policies and economic progress (BR)..... 226, 392, (C) 394

- Industrial renaissance of the South..... 281

- Major reports issued..... 943

ECONOMICS (<i>continued</i>)	
Mathematical formulas as aids to business choices (BR).....	535
Monopoly-investigation testimony.....	159
Power plants for joint utility and industrial service.....	619
Price of security (BR).....	463
Promises and debts (BR).....	27
Purchasing power, price fixing, high wages, inflation, and a flexible system.....	209
Uninvested savings (BR).....	907
Young engineer facing tomorrow.....	347
ECONOMICS CONFERENCE	
For engineers, ninth annual. 253, 411, 491,	627
EDITORIALS	
Accent on quality.....	861
Accent on quantity.....	862
Aeronautical research.....	106
Alas, the paring knife.....	345
All he can get.....	193
A.S.M.E. today.....	707
Best men are needed.....	346
British visit us.....	501
Columbia's birthday.....	862
Covers (<i>Mechanical Engineering</i>).....	427
Doty, Paul.....	4
Engineering's great task.....	573
Enrichment.....	707
Ford and Watt.....	779
Forty plus.....	779
Gas turbine.....	271
Good engineering also necessary.....	502
Jobs for engineers.....	428
"Light, more light".....	707
Metal-cutting data.....	779
More work for engineers.....	3
National delegates needed.....	428
National resource.....	194
New England enterprise.....	643
No monopoly of brains.....	502
Paid directors.....	346
Patent data wanted promptly.....	427
Preprint and publication.....	501
Professional ideal.....	105
Roster of A.S.M.E. Committees.....	193
Schwab, Charles M.....	708
Significant trends.....	861
Spectrographic analysis.....	427
Thurston centenary.....	780
What about engineers' unions?.....	780
What is mechanical engineering?.....	643
Whichever way.....	345
Youth and labor.....	272
Youth at Rutgers.....	708
EDUCATION	
Accent on quality, quantity (Ed).....	861
Armour and Lewis Institutes consolidated (A).....	917, 942
Condit, K. H., appointed dean of Princeton School of Engineering (A).....	917
Engineering's great task (Ed).....	573
For industry.....	875
Graduate work in engineering.....	900
Of the design engineer (A).....	316
Preprofessional training.....	114
Requisites for engineering leadership.....	903
Significant trends (Ed).....	861
Social responsibility of the engineer.....	653
Unconscious tuition.....	113
What is mechanical engineering? (Ed).....	643
Young engineer's responsibility to industry.....	136
EKKO PROCESS	
Electroforming of tire molds (A).....	830
ELASTICITY	
And damping in relation to the state of the material (A).....	231
ELBERTY, R. S.	
Motor drives and electric controls on machine tools (C).....	245
ELECTRIC EAR	
Use of, for machine and product testing (A).....	831
ELECTRIC MOTORS	
Drives for machine tools (C).....	245
ELECTRIC UTILITIES	
Studies by Federal Power Commission.....	638
ELECTRICAL INSULATION	
Alsifilm (A).....	384
ELECTRICAL MACHINE	
New type of (A).....	545
ELECTROFORMING	
Tire molds by Ekkō process (A).....	830
ELECTROSTATIC GENERATOR	
Installation at the M.I.T. (A).....	163
EMPLOYMENT. <i>See also</i> Unemployment.	
Increase in.....	944
Jobs for engineers.....	(Ed) 428, (C) 478
More work for engineers (Ed).....	3
ENERGY	
Weight of stored energy (A).....	836
ENERGY FROM MATTER (A).....	754
ENGINE-EXHAUST-GAS CONDITIONER (A)...	832
ENGINEERING. <i>See also</i> Marine Engineering, Mechanical Engineering, Railway Engineering.	
Alas, the paring knife (Ed).....	345
Best men are needed (Ed).....	346
Good engineering also necessary (Ed).....	502
Great task of (Ed).....	573
Professional spirit in.....	195
What is it? (A).....	156
ENGINEERING AND CIVILIZATION (BR).....	323
ENGINEERING AND PATENTS	
ENGINEERING EXPERIENCE	
What is it?.....	305
ENGINEERING FOUNDATION	
Elects new officers.....	935
Report of trustees.....	98
ENGINEERING INDEX	
Agreement with.....	91
ENGINEERING LEADERSHIP	
Requisites for.....	903
ENGINEERING SCHOOLS	
Accrediting of.....	60
And trade unions (A).....	391
ENGINEERING SOCIETIES	
Job for (C).....	478
ENGINEERING SOCIETIES EMPLOYMENT SERVICE	
ICE	
Positions available.....	100, 188, 266, 340, 422, 496, 568, 638, 702, 774, 856,
ENGINEERING SOCIETIES LIBRARY	
Aids engineers of the world.....	222
Greatest in the world.....	533
Papers copied by microfilm.....	485
Report of trustees.....	98
ENGINEERING STUDENTS	
Statistics reported (A).....	238
ENGINEERS	
An engineer's miscellany (BR).....	172
Associations in South America.....	603
"Ersatz," education reduced (A).....	157
In public service.....	742
Incomes, All he can get (Ed).....	193
Jobs for.....	(Ed) 428, (C) 478
Labor unions for. <i>See</i> Engineers' Unions.	
Licensing of, <i>See</i> Engineers' Registration.	
Light, more light (Ed).....	
More work for (Ed).....	
Physiology for.....	
Professional ideal (Ed).....	
Social responsibility of.....	
Symposium on improvement of status of civil engineers (A).....	
Wage schedule and grading plan for civil engineers (A).....	
Will they support the professional ideal?.....	
Working for better engineers.....	
Young college man in industry (Ed).....	
Panel discussion.....	
Young engineer facing tomorrow.....	
Young, responsibility to industry.....	
ENGINEERS' COUNCIL FOR PROFESSIONAL DEVELOPMENT	
Accent on quality, quantity (Ed).....	861
Accrediting engineering schools.....	862
By-products of (BR).....	30
Professional recognition.....	912
Report of activities.....	29
Report of seventh annual meeting.....	60
Significant trends (Ed).....	999
ENGINEERS' GUILD (BRITISH).....	612
ENGINEERS' REGISTRATION	
Maryland enacts registration law.....	765
Model registration law revised.....	844
Professional Recognition.....	61
Registration bill for District of Columbia.....	29
Society asked to assist in preparing examinations.....	263
What is engineering experience?.....	699
ENGINEER'S TESTIMONY (A).....	305
ENGINEERS' UNIONS	
Engineering schools and trade unions (A).....	391
Unionization of engineers.....	788
What about engineers' unions? (Ed).....	780
ENGINES	
Particulars of engine economy governing marine transport.....	884
Sectional crankshafts (A).....	314
ENGINES, AIRCRAFT	
Developments in 1938.....	153
Gasoline fuel-injection type (A).....	36
Place of Diesel engine in our national defense.....	799
Sklenar rotary engine (A).....	38
ENGINES, DIESEL. <i>See also</i> Diesel Rail Cars.	
Automobile, in Great Britain.....	435
Comparison of ignition-quality data (A).....	832
Convertible to gas engines (A).....	36
Exhaust-gas conditioner and flame arrester for mine use (A).....	232
Forty years of development.....	213
Installations for U. S. merchant marine.....	203
ENGINES, DIESEL (<i>continued</i>)	
Lubrication of high-speed.....	357
Marine, in Great Britain.....	436
1938 report on oil-engine-power cost available.....	845
Opposed-piston Diesel engine (A).....	750
Pescara crankless, with compressor.....	216
Pilot-injection tests (A).....	230
Place of Diesel engine in our national defense.....	799
Present position of, in Great Britain.....	429
Pumpless injection (A).....	833
Traction-type opposed-piston engine (A).....	313
ENGINES, GAS	
Present position of, in Great Britain.....	429
ENGINES, GASOLINE	
Carburetorless (A).....	36
Convertible to gas engines (A).....	36
ENGINES, INTERNAL-COMBUSTION. <i>See also</i> Gas Turbines.	
Book Review.....	402
Design in Europe.....	525
Four-cylinder engine of the Volkswagen (A).....	312
French symposium papers on combustion available.....	264
Lead attack on exhaust valves (A).....	615
Multifuel engines (A).....	923
Present position of, in Great Britain.....	429
Reducing noise from, in ships (A).....	35
ENGINES, NATURAL-GAS	
Report on gas-engine power (A).....	36
ENGINES, STEAM	
Steam-engine history (BR).....	323
Thomas Newcomen's steam engine (C).....	837
ENNIS, W. D.	
Applied economics for engineers (BR)....	928
ENRICHMENT (Ed).....	779
EPSTEIN, EDWARD	
Centenary of photography (translation)...	24
ESHELMAN, J. W.	
Nominated for Manager of A.S.M.E.	632
EUROPEAN SCIENTIFIC JOURNALS	
Report failure to receive.....	942
EVANS, OLIVER	
Committee appointed for memorial.....	633
EVAPORATORS	
Feedwater treatment (C).....	240
Steam-electric locomotive.....	817
Turbine back-pressure control (C).....	240
EXPANSION LOOPS	
Made from welding fittings.....	370
EXPLORATION	
Snow cruiser for antarctic exploration (A).....	684
EXPLOSIONS	
Dust hazard (C).....	320
F	
FACSIMILE	
Newspapers by radio (A).....	680
Telegraph industry (A).....	317
FACTORIES	
Without windows (A).....	615
FACTORY LAYOUT AND SAFETY (A).....	238
FATIGUE OF METALS. <i>See also</i> Fretting Corrosion.	
Fatigue and corrosion fatigue of steels (C)	318
FEDERAL POWER COMMISSION	
Statistical study of utilities issued.....	638
FEDERAL WORKS AGENCY.....	465, 494
FEEDWATER TREATMENT. <i>See</i> Water Conditioning.	
FELLOWS, JULIAN R.	
A downdraft conversion burner for domestic furnaces.....	278
FERMI, ENRICO	
To serve at Columbia University.....	157
FERRIS, CHARLES E.	
Graduate work in engineering.....	900
FERRIS, JOHN P.	
Advanced by T.V.A. (A).....	749
Cottonseed processing research (C).....	618
Immersion quick freezing.....	437, (C) 925
FIELD, CROSBY.	
Testimonial dinner to....	186
FIELDNER, A. C.	
Coal hydrogenation.....	605
FIRE PROTECTION (A).....	836
FISHER, HARRY L.	
Rubber as an engineering material (C)...	241
FLAME CUTTING	
High-tensile structural steel (A).....	315
FLAME DESCALING.....	680

FLANDERS, RALPH E.	
Immersion quick freezing (C).....	925
FLAX	
Flax in cotton industry (A).....	752
FLIGHTRAY. <i>See</i> Aircraft Instruments.	
FLOW OF FLUIDS. <i>See also</i> Fluid Meters, Pitot Tubes.	
Air flow in pipes.....	665
Determination of pipe-line velocities in brackish water.....	530
FLOWMETERS. <i>See</i> Fluid Meters.	
FLUE GAS	
Stack-loss chart for refinery gas.....	510
FLUE-GAS ANALYSIS	
Check chart for oil stills.....	510
FLUID METERS	
Discharge coefficients for concentric thin-plate orifices with vena-contracta taps (C).....	550
Magnetic flowmeter.....	20
Notes on flowmetering published.....	552
Pipe bends and meter location.....	549
FLY ASH	
Utilization of (C).....	475
FOOD PACKAGING	
Rubber wrapper for foods (A).....	317
FOOD-PRESERVATION CONFERENCE	337
FOOD PROCESSING	
Immersion quick freezing.....	437, (C)
FORD, HENRY	
Ford and Watt (Ed).....	707
I.M.E. confers honorary membership.....	854
FORDE, W. T.	
Tooling automatic screw machines (C)....	239
FOSTER, JED S.	
Testimonial dinner.....	678
FOURNEYRON, BENOIT	
Biography.....	295
FREEMAN, RALPH E.	
Technology and price-making (BR).....	226, (C)
FREEMAN, STERRY B.	
Mechanical-engineering problems in marine transport (abstract).....	882
FREEZING PROCESSES. <i>See</i> Frozen Foods.	
FRETTING CORROSION	
Report of tests on (A).....	386
FRICITION. <i>See also</i> Adhesion.	
Braking of railroad trains.....	585
Chromium plating gives low coefficient of friction (A).....	830
Coefficients of, for automobile tires.....	125
FROZEN FOODS	
Immersion quick freezing.....	437
FRY, LAWFORD H.	
Receives Worcester Reed Warner Medal.	49
FUEL. <i>See also</i> Gasoline, Lignite, Wood Waste.	
Combustion in small underfeed stokers (A).....	682
Comparative economy of generating steam with anthracite, bituminous coal, and fuel oil for industrial plants in New York area.....	804
Ignition quality of Diesel fuels (A).....	831
Power and fuel.....	581
Standards proposed for tractor distillates (A).....	617
FUEL DRYING	
Effect of, on wood-waste fuel.....	119
FUEL-INJECTION SYSTEMS	
For gasoline engines (A).....	36
FUNK, FRITZ. Obituary.....	158
FURER, W. C. Salute to.....	679
FURNACES. <i>See</i> Blast Furnaces, Boiler Furnaces, Domestic Furnaces, Oil-Still Furnaces.	
G	
GAGES	
Ordnance laboratory at Carnegie Tech...	564
GAS TURBINES	
Combustion gas turbine.....	645
Gas Turbine (Ed).....	271
Jendrassik combustion turbine (A).....	312
Vogt's experiments.....	214
GASES	
Specific heats of, new equations (A).....	389
Temperature measurement of (A).....	545
GASOLINE	
Rating of 125 octane.....	510
GASOLINE ENGINES. <i>See</i> Engines.	
GEARS	
Load-capacity formulas for (A).....	233
GEER, WILLIAM C.	
History of rubber as an engineering material (C).....	243
GILBRETH, LILLIAN M.	
Management in the small plant.....	597
GLADDEN, CHARLES S.	
Combustion of wood-waste fuels (C).....	621
GLASS	
Invisible, light transmission of (A).....	231
New optical glass patented (A).....	384
New ultra-low-expansion (A).....	615
GLASS WOOL. <i>See</i> Mineral Wool.	
GOODRICH, ERNEST P.	
Immersion quick freezing (C).....	925
GOUGE, A.	
Transatlantic air transport with particular reference to flying boats (abstract).....	876
GOVERNMENT	
Domestic issues (A).....	915
Extra-tariff control of foreign trade.....	790
Fair Labor Standards Act (BR).....	676
Research activities of the.....	376
Young engineer facing tomorrow.....	347
GOVERNMENT LOANS	
Good engineering also necessary (Ed).....	502
To business.....	565
GOVERNMENT REORGANIZATION	
Effective July 1st.....	568
Report by A.E.C.....	494
GOVERNMENT SPENDING	
Day by day.....	381
GOVERNMENT SPENDING AND ECONOMIC RECOVERY (BR)	
GRADUATES	
Job prospects, 1939.....	699
GRAVES, B. P.	
Motor drives and electric controls on machine tools (C).....	246
GRINDING. <i>See also</i> Thread Grinding.	
Of high-speed cutting tools (A).....	388
GRINDING MACHINES	
Machine-tool-spindle analysis.....	813
GRINDING-WHEEL PRACTICE	
Revised recommendations available.....	700
H	
HAEL, O. W.	
Machine design and motion economy....	897
HAGGARD, HOWARD W.	
Physiology for the engineer.....	8
HAIGHT, H. V.	
Canadian mine hoists.....	885
HALL R. E.	
Corrosion in partially dry steam-generating tubes (C).....	552
Routing nightmares of water conditioning.....	715
HARD SURFACING	
Processes and materials for (C).....	395
HARDIE, P. H.	
Defining equitable limits of dust emission from stacks.....	895
HARDNESS TESTER (A)	753
HARTIG, HENRY E.	
Air flow in pipes.....	665
HATCH, THEODORE F.	
Medicolegal phases of occupational diseases (BR).....	759
HAUSHALTER, F. L.	
Rubber as an engineering material (C)....	242
HAZELETT, C. W.	
Direct rolling of metal.....	823
HEAT INSULATION	
Mineral Wool (A).....	384
HEAT-TREATMENT. <i>See also</i> Nitriding, Surface Hardening.	
Austempering steel (A).....	683
HEATERS, ORCHARD	
A new type.....	443, (C)
HEATING	
Combustion in small underfeed stokers (A).....	682
HEATING SYSTEMS	
Efficiencies of steam turbines combined with.....	669
HECK, R. C. H.	
New Callendar steam tables (BR).....	839
Vapor charts (BR).....	840
HELANDER, LINN	
Nominated for manager of A.S.M.E....	632
HELICOPTERS	
Aeronautical research (Ed).....	106
HELIUM	
New uses for, in anesthesia, asthma, deep-sea diving.....	112
Solubility of, in oil and water compared to nitrogen.....	112
HENDERSON, YANDELL	
The possible use of helium in subaqueous engineering.....	112
HERON, ALEXANDER R.	
Labor problems of branch-plant management.....	722
HERRON, JAMES H.	
Unionization of engineers.....	788
HEWES, C. K.	
New-type orchard heater (C).....	837
HILDRETH, W. O.	
Fifty-Year Member....	50
HIRSHFIELD, C. F.	
Awarded John Fritz Medal posthumously.	943
Biography.....	467
HOBART, JAMES C.	
Fifty-Year Member...	50
HODGES, JOHN L.	
Smoke-density measurements (C).....	73
HODGKINSON, FRANCIS	
Holley Medal recipient.....	49
Latest developments of the Benson Boiler.....	217
Typical installations of.....	287
Nominated for Vice-President of A.S.M.E.....	631
Steam-turbine efficiencies.....	668
HOGAN, JOHN P.	
Nominated president of A.S.C.E.....	856
HOISTING MACHINERY	
Canadian mine hoists.....	885
HOLLAND, C. K.	
Metropolitan junior group objectives (C)....	478
HOMERBERG, V. O.	
Hard-surfacing processes and materials (C).....	395
HONORS AND AWARDS	
Alfred P. Sloan Foundation Scholarships in business administration.....	697
A.S.M.E. Medal.....	536
Recipients of.....	537
Awards for 1939 voted.....	844
Awards in industry.....	310
Calvin W. Rice Lecture (A.S.M.E.)....	599
Charles T. Main Award (A.S.M.E.)	
1939 subject announced.....	182
Edison Medal (A.I.E.E.) Award.....	157
Presentation.....	227
Henry Robinson Towne Lecture.....	5
Holley Medal (A.S.M.E.)	
History of, and recipients.....	168
Hoover Medal. Awards.....	97, 854
Presentation.....	228
James Watt International Medal Award.....	707
John Fritz Medal. Presentation.....	228
Posthumous award.....	943
Juan de la Cierva Memorial Fellowship (Ed).....	106
King George's New Year's honors (A)....	157
Lammie Medal (A.I.E.E.) Award.....	337
Local-Sections Prizes (A.S.M.E.)....	182
Melville Medal (A.S.M.E.)	
Recipients of.....	304
Old Guard Prizes (A.S.M.E.)....	182
Pi Tau Sigma Award.....	49
Presentation of, at Annual Meeting.....	49
Rice Scholarships established.....	935
Robert Henry Thurston Lecture.....	8
Spirit of St. Louis Junior Award.....	225
Spirit of St. Louis Medal (A.S.M.E.)....	224
Recipients.....	225
Student-Group Meeting Prizes.....	182
Student loans by A.S.M.E. Woman's Auxiliary.....	493
Sylvanus Albert Reed Award (I. A. S.)....	255
Undergraduate-Student Awards.....	182
United Air Lines Scholarships	
A.S.M.E. student members win.....	698
Vermilye Medal. Presentation (A)....	917
Washington Award. Presentation of....	229
Worcester Reed Warner Medal.....	379
Recipients of.....	380
Wright Brothers Lecture (I.A.S.)....	97
HOUSING	
Economic factors of housing problem....	781
HOWARD, GEORGE W.	
Determination of pipe-line velocities in brackish water.....	530
HUDSON, R. M.	
Industry, labor, and the public (C).....	244
HUMPHREYS, CYRIL G. R.	
Newcomen and Humphrey Potter (C).....	837
The tilt hammer (C).....	756
HUNSAKER, J. C.	
Nominated for Vice-President of A.S.M.E.....	630
HYDRAULIC MACHINE TOOLS. <i>See</i> Machine Tools.	

HYDRAULIC TURBINES	
Early turbines of Fourneyron.....	295
Modern trends in design.....	575
Pelton water wheel, historical.....	
.....	447, 511, (C)
HYDRAULICS	
Biography of Benoit Fourneyron.....	295
Lecture course announced by B.S.C.E.....	847
"HYDROCAL"	
Apparatus for solving heat-transient problems (C).....	319
HYDROELECTRIC POWER PLANTS. <i>See</i> Power Plants.	
HYDROGENATION. <i>See</i> Coal Hydrogenation.	

I

IGNITION QUALITY	
Rating of Diesel fuel (A).....	831
ILLINOIS INSTITUTE OF TECHNOLOGY	
Consolidation of Armour and Lewis Institutes.....	917, 942
ILLUMINATION. <i>See also</i> Lighting.	
Affects more than the eye.....	9
Reflecting surfaces.....	137
IMMERSION QUICK FREEZING. <i>See</i> Frozen Foods.	
INCOME	
National, definition and comparison of.....	159
INDUSTRIAL CONFERENCE	
Young college man in industry.....	697, 769
INDUSTRIAL MANAGEMENT. <i>See</i> Management.	
INDUSTRIAL PRICE POLICIES AND ECONOMIC PROGRESS (BR).....	226, 392, (C)
INDUSTRIAL RELATIONS	
Compulsory arbitration in Australia (BR).....	148
Functions of the executive (BR).....	375
Human relations in industry (BR).....	580
Industry, labor, and the public (C).....	244
Pacific Coast peculiarities of branch-plant management.....	724
Youth and labor (Ed).....	272
INDUSTRIAL TRAINING	
Young college man in industry (Ed).....	708
Panel discussion.....	769
INDUSTRIAL WARTE	
Problems and their correction.....	359
INDUSTRIES	
Contribution to stream pollution.....	360
INDUSTRY	
Awards to workers.....	310
In rural communities.....	437, (C)
Bibliography.....	442
Industry, labor, and the public (C).....	244
Modernization, in survey (A).....	156
Monopoly-investigation testimony.....	159
Paid directors (Ed).....	346
Renaissance of the South.....	281
Young college man in.....	769
Young engineer facing tomorrow.....	347
INFLATION	
And the gold standard.....	209
INGRAMHAM, OLIN	
Mathematical formulas as aids to business choices (BR).....	535
INSTRUMENTATION	
Conference on, planned.....	186
INSTRUMENTATION CONTEST	766
INSULATION. <i>See</i> Electrical Insulation, Heat Insulation.	
INSURANCE	
Boiler and machinery insurance (A).....	750
INTERNAL-COMBUSTION ENGINES. <i>See</i> Engines.	
INTERNAL-COMBUSTION NUTCRACKER (A)...	236
INTERNATIONAL CONGRESS OF MATHEMATICIANS	
Cambridge meeting.....	264
INTERVIEW FACILITIES	
For A.S.M.E. members.....	424
INVENTION	
Development of new products.....	661
INVISIBLE GLASS. <i>See</i> Glass.	
IRBY, WILLIAM	
Materials for reflecting surfaces.....	137
IRWIN, K. M.	
Nominated for Vice-President of A.S.M.E.....	632

J

JACKSON, DUGALD C.	
Edison Medal award.....	157, 227
JACOBUS, D. S.	
Cooperative work of the A.S.M.E. Boiler Code Committee.....	595
JAMES, J. R.	
Utilization of pulverized-coal ash (C).....	476
JEWETT, FRANK B.	
Presented with John Fritz Medal.....	228
JOBS REQUIRE CAPITAL	
Survey by Toledo Associates (A).....	156
JOHNSON, RAWLEIGH M.	
Influence of steam-flow metering equipment on piping design (C).....	547
JOHNSON, WILFRID E.	
Receives Pi Tau Sigma Award.....	49
JOINT PATENT INQUIRY. <i>See</i> Patent Inquiry.	
JUDKINS, MALCOLM F.	
Metal cutting.....	349

K

KEARFUL, G. G.	
Machine design and motion economy.....	897
KEATOR, FREDERIC W.	
Benoit Fourneyron (1802-1867).....	295
KELLER, ARTHUR G.	
Factors in sugar-cane milling.....	365
KERR, CHARLES, JR.	
Electric locomotives (C).....	473
KIDDE, WALTER	
Railroad trustee (A).....	679
KIMMICH, E. G.	
Misconceptions about rubber (A).....	237
Production processes and problems in the rubber industry (A).....	165
KINZEL, A. B.	
Hard-surfacing processes and materials (C).....	396
KLEIN, AUGUST C.	
Economics of a power plant for joint utility and industrial service.....	619
KLINE, M. E.	
A.S.M.E. Publications "back talk" (C) ..	759
KOLTZ, H. J.	
Industrial-evaporators (C).....	241
KREISINGER, HENRY	
Combustion of wood-waste fuels. 115, (C)	620
KUGEL, H. K.	
Smoke-density measurements (C).....	73

L

LABOR	
Awards in industry.....	310
Floor under wages (BR).....	676
Industrial renaissance of the South.....	281
LABOR AND YOUTH (Ed).....	272
LABOR, INDUSTRY AND THE PUBLIC (C)...	244
LABOR PROBLEMS	
Domestic issues (A).....	915
Of branch-plant management.....	722
LABOR UNIONS. <i>See also</i> Engineers' Unions.	
For engineers.....	788
(A) 391,	
Youth and labor (Ed).....	272
LAIRD, A. W.	
Electric locomotives (C).....	473
LAMPS, ELECTRIC	
New types and applications (A).....	468
LANSFORD, W. M.	
Magnetic flowmeter.....	20
LARNED, A. T.	
Hydroelectric power-plant design.....	575
LASTICS. <i>See</i> Synthetic Rubber.	
LATCHES	
Quick-acting release latches.....	807
LEAD ATTACK ON ENGINE EXHAUST VALVES (A).....	615
LEONARD, A. S.	
A new-type orchard heater.....	443, (C)
LESLIE, GEORGE C.	
Design and operation of De Flores furnaces.....	503
LESSELLS, JOHN M.	
A rational approach to tire-tread design..	125

LIBRARIES. <i>See</i> Engineering Societies Library.	
LICENSING OF ENGINEERS. <i>See</i> Engineers' Registration.	
LIGHTING. <i>See also</i> Illumination.	
Reflectors for.....	137
LIGNITE	
Composition of gases in fuel bed of.....	116
LIPETZ, A. I.	
Electric locomotives (C).....	474
Melville Medal Recipient.....	49
LIPPS, HENRY, JR.	
Fifty-Year Member.....	50
LIVERNAH, E. ROBERT	
National Labor Relations Act (BR).....	740
LOCOMOTIVES	
Additions and corrections to 1938 report of Railroad Division Committee RR6 Survey.....	149
Comparisons of various characteristics of different types of (C).....	472
Construction details of various types.....	863
Design factors affecting riding, guiding, and rail and locomotive stress (C).....	472
Steam versus Diesel-electric (A).....	469
Weights of various types (C).....	473
LOCOMOTIVES, DIESEL-ELECTRIC	
Heat losses and operating costs (A).....	470
Switchers in Great Britain.....	434
LOCOMOTIVES, GAS-TURBINE	
Comparisons with other types.....	648
LOCOMOTIVES, STEAM	
Counterbalance tests.....	867
Heat losses and operating costs (A).....	470
Road tests of.....	866
LOCOMOTIVES, STEAM-ELECTRIC	
Demonstration trip.....	466
Design of the Union Pacific steam-electric locomotive.....	709, 817, 869
LONG, MARSHALL C.	
Receives postgraduate student award....	49
LOUISIANA ENGINEERING SOCIETY	
Program of meeting.....	178
LUBRICANTS	
Additive agents for high-speed Diesels...	357
LUBRICATION	
Of high-speed Diesel engines.....	356
LUCKE, CHARLES E.	
Engineering and patents.....	531
LUSHER, DAVID W.	
Government spending and economic recovery.....	307
M	
MACHINABILITY. <i>See</i> Metal Cutting.	
MACHINE DESIGN	
Education for (A).....	316
Formulas for gears (A).....	233
Motion economy in.....	897
New method of machine-tool-spindle analysis.....	813
Quick-acting release latches.....	807
MACHINE TOOLS	
Advantages of hydraulic drives (A).....	165
Machine design and motion economy.....	897
Motor drives and electric controls (C)...	245
New methods of machine-tool-spindle analysis.....	813
Tooling automatic screw machines (C)...	239
MACHINERY INSURANCE (A).....	750
MACLAURIN, W. RUPERT	
Industrial relations in Australia (BR)...	148
MAGNA CHARTA (A).....	541
MAINTENANCE	
Function of management.....	373
Use and properties of hard chromium plating (A).....	830
MANAGEMENT	
Courses at University of Iowa.....	337
Functions of the executive (BR).....	375
History of scientific management in America.....	671
Labor problems of branch-plant management.....	722
Materials, methods, and men.....	5
Organization problems of branches.....	460
Paid directors (Ed).....	346
Principles of, applied to the small business.....	373
Science of production organisation (BR).....	172
Small-plant.....	597
Social relationships and industrial unrest (BR).....	580
Trade associations (BR).....	80
MANAGEMENT CONFERENCE	
Iowa City.....	255, 412

MANAGEMENT CONGRESS	
Proceedings of Washington meeting available at reduced cost.....	943
MANUFACTURERS, CENSUS OF	
Value of products and persons employed by industries contributing to stream pollution.....	360
MANUFACTURING	
Industrial renaissance of the South.....	281
MARINE ENGINEERING	
Benson boilers on German ships.....	221
Developments in the U. S. merchant marine.....	203
Marine steam power plants (A).....	686
MARKS, LIONEL S.	
Smoke-density measurements (C).....	74
MARKSON, A. A.	
Photographic study of steam-boiler furnaces in operation.....	729
MARTIN, S. M., JR.	
Synthetic substances with rubber-like properties (C).....	320
MASON, MARTIN A.	
Pelton water wheel (C).....	755
MATHEMATICS	
"Center" of mathematical analysis established at M.I.T.....	309
MCBRYDE, WARREN H.	
Nominated for president of A.S.M.E.....	629
MCCLURE, JOSEPH C.	
Braking high-speed trains as an engineering problem.....	583
McCUTCCHAN, ARTHUR	
Creep in tubular pressure vessels (C).....	757
McDONALD, A. T.	
Some factors in the lubrication of high-speed Diesel engines.....	356
McDONALD OBSERVATORY	
McGREGOR, DOUGLAS	
Social relationships and industrial unrest (BR).....	580
McINERNEY, J. E. B.	
Place of Diesel engine in our national defense.....	799
McPHERSON, A. T.	
Rubber as an engineering material (C).....	242
McSORLEY, DONALD C.	
Receives undergraduate student award.....	49
MEAD, DANIEL W.	
Washington Award presented to.....	229
MEASURING INSTRUMENTS	
For measuring thickness of metal from one surface (A).....	231
Millions of an inch (A).....	236
Ordnance laboratory at Carnegie Tech.....	564
Spectrograph, analysis with (Ed).....	427
Velocity of air flow in pipes, measurement by sound pulses.....	665
MECHANICAL ENGINEERING	
Materials, methods, and men.....	5
What is mechanical engineering? (Ed).....	643
MEDALS. <i>See</i> Honors and Awards.	
MEDICAL TREATMENT	
Freesing human diseases (A).....	754
MERCURY	
Many uses of (A).....	920
METAL CUTTING. <i>See also</i> Flame Cutting.	
Manual on Cutting of Metals.....	694
(Ed) Manufacture and use of high-speed cutting tools (A).....	387
Principles underlying mechanism of cutting metals with single-point tools; machinability measurement and control; selection of machinable and tool materials.....	349
METAL ROLLING	
Direct rolling of metal.....	779
METAL SPINNING (A)	
METALLURGY. <i>See also</i> Cast Iron, Steel.	
Austempering steel (A).....	683
Boiler-embrittlement specimens (C).....	146
Creep of steel (A).....	314
Direct rolling of metal.....	824
Fatigue and corrosion fatigue of steels (C).....	751
Hardness of weld deposits on mild steel (C).....	823
Properties, alloys, heat-treatment, specifications, and uses of cast iron.....	318
Researches in steel metallurgy (A).....	396
Strength of metals at elevated temperatures.....	455
METALS	
Reflectivity of.....	137
METEOROLOGY	
Development in.....	150
METERS. <i>See also</i> Fluid Meters, Pitot Tubes.	
Smoke-density indicators (C).....	71
MEYER, ADOLphe	
Combustion gas turbine.....	645
MICA SUBSTITUTE	
Alsfilm (A).....	384
MIDWEST POWER CONFERENCE	
<i>See also</i> Army Aviation, Army Ordnance, National Defense, Naval Vessels, Preparedness, War.....	337
MILITARY STRENGTH	
<i>See also</i> Army Aviation, Army Ordnance, National Defense, Naval Vessels, Preparedness, War.....	412
MILL WHEEL (1835) (C)	
MILLER, PAUL V.	
Recent developments in thread-grinding practice (C).....	244
MILLER, RICHARD F.	
Strength of metals at elevated temperatures.....	589
MILLS, SUGAR-CANE	
Types and performance of.....	365
MINE HOISTS. <i>See</i> Hoisting Machinery.	
MINERAL WOOL	
Production, fabrication, and application of (A).....	384
MINERALS	
Strategic minerals sought.....	943
Storage of.....	566
MOCK, RICHARD M.	
Development in airplane design.....	151
MODELS	
Tests on all-welded girder (A).....	544
MODERNIZATION IN INDUSTRY	
Survey in New England (A).....	156
MONNETT, OSBORN	
Smoke-density measurements (C).....	74
MONOPOLY INVESTIGATION. <i>See</i> Temporary National Economic Committee.	
MOORE, A. D.	
Quantitative analysis of process lags (C).....	319
MORGAN, H. H.	
Installed as president of A.S.T.M.....	694
Correction.....	772
MORKEEN, CARL H.	
Some engineering aspects of cast iron.....	455
MOSS, SANDOR A.	
"Back talk" on publications (C).....	622
MOTION-AND-TIME STUDY	
Scientific management in the small business.....	374
MOTOR VEHICLES. <i>See also</i> Automobiles.	
Motor Transport in Great Britain (abstract).....	878
Railway-highway competition in Great Britain (A).....	683
Regenerative braking (A).....	685
Snow cruiser for antarctic exploration (A).....	684
MOWAT, MAGNUS	
Retires as secretary of I.M.E.....	186
MUMFORD, A. R.	
The Engineering Societies Library.....	533
MUSEUMS	
Sheffield Museum (A).....	382
Technical museums in Soviet Russia.....	(C) 756
735	
N	
NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS	
Annual inspection of laboratories.....	419
Annual report of, excerpt (Ed).....	106
Mainly a research agency.....	377
Pamphlet illustrates extent and variety of committee's researches.....	748
Report on aircraft conference.....	492
Testimonial presented to Joseph S. Ames (A).....	917
NATIONAL BUREAU OF ECONOMIC RESEARCH	
Committee on cost-price relationships formed.....	420
NATIONAL DEFENSE. <i>See also</i> Army Aviation, Army Ordnance, Military Strength, Naval Vessels, Preparedness, War.	
Aeronautics and national defense.....	523
America looks to her guns.....	273
Congressional appropriation.....	700
Meeting of American Conference on National Defense.....	381
Place of Diesel engine in our national defense.....	799
NATIONAL DEFENSE POWER COMMITTEE	
Standards for turbine generators (A).....	38
NATIONAL LABOR RELATIONS ACT	
Book review.....	740
Light, more light (Ed).....	707
Poll on Act and Board (A).....	237
NATIONAL RESOURCES	
Major reports issued.....	943
NATIONAL RESOURCES BOARD	
Establishment of, proposed.....	263
NATURAL-GAS ENGINES. <i>See</i> Engines.	
NAVAL VESSELS	
Place of Diesel engine in our national defense.....	799
NEFF, ELMER H.	
Control of small-plant purchases (C).....	552
Cost of apprenticeship (C).....	394
How Useful Is Your Sense of Proportion? (C).....	319
Thread-grinding practice (C).....	243
NELLES, JOHN S.	
Possibilities for utilization of pulverized-coal ash (C).....	477
NELSON, ELWOOD E.	
Corrosion in partially dry steam-generating tubes.....	199, (C) 552
NEUTRALITY	
Day by day (A).....	915
NEW ENGLAND	
Modernization in industry (A).....	156
NEW ENGLAND ENTERPRISE (Ed)	
<i>See</i> New York World's Fair (A).....	643
NEW YORK WORLD'S FAIR (A)	
NEWCOMEN AND HUMPHREY POTTER (C)	
NIEHOFF, RICHARD O.	
Graduate work in engineering.....	900
NITRIDING	
Fly process (C).....	395
NOISE. <i>See also</i> Sound.	
Electric noise analyzer (A).....	831
Reduction of, on ships (A).....	35
NORRIS, C. B.	
Elected chairman of Executive Committee of Wood Industries Division.....	934
NOZZLES	
Speed regulating, for Pelton wheels.....	516
NUTCRACKER, INTERNAL-COMBUSTION (A)	
NYLON	
Synthetic fiber (A).....	35
O	
O'BRIEN, EUGENE W.	
Industrial renaissance of the south.....	281
OCCUPATIONAL DISEASES	
Medicolegal phases of (BR).....	759
OIL. <i>See also</i> Fuel, and headings under Petroleum.	
New fuel-oil burner (A).....	37
New-type orchard heater.....	443, (C) 837
OIL-ENGINE-POWER	
1938 report available.....	845
OIL FILTERS	
Lubrication of high-speed Diesels.....	358
OIL-STILL FURNACES	
Design and operation of De Florez furnaces.....	503
OIL TREATMENT OF COAL. <i>See</i> Coal Treatment.	
OIL-WELL EQUIPMENT	
Control equipment for high-pressure oil and gas wells.....	725
OKOUYE WOOD (A)	
OPTICAL GLASS	
New method makes better glass (A).....	384
ORCHARD HEATERS	
New type.....	443, (C) 837
ORDNANCE. <i>See</i> Army Ordnance.	
ORGANIZATION. <i>See</i> Management.	
ORIFICES. <i>See</i> Fluid Meters.	
ORROK, GEORGE A., JR.	
Fuel savings determine design of superposed unit.....	519
OTTAWAY, E. C.	
Motor transport (abstract).....	878
OVENs	
Paint-baking, infrared lamps (A).....	468
OVERTON, W. J.	
Appointed secretary of Petroleum Division.....	942
P	
PACKAGING MATERIAL	
Alsfilm (A).....	384
PAID DIRECTORS (Ed)	
<i>See</i> Management.	346

PAINTS, TEMPERATURE-INDICATING (A)....	471	POWELL, SHEPPARD T.	
PALMER, DWIGHT L.		Industrial-waste problems and their correction.....	359
Price of security (BR).....	463	POWER	
PANKEE, C.		Economics of a power plant for joint industrial and utility service.....	121
Modern timber construction.....	791	Exports supervised.....	943
PARK, G. E.		Methods of storing (A).....	389
New lamps and applications (A).....	468	POWER PLANTS. <i>See also</i> Marine Engineering, Naval Vessels, Ships.	
PARKER CASE.....	61, 181, 847	Economics of, for joint utility and industrial service.....	121
PARSONS, SIR CHARLES (A).....	748	Installations of the Benson boiler.....	287
PARTRIDGE, EVERETT P.		Solar-heat (A).....	388
Corrosion in partially dry steam-generating tubes (C).....	552	POWER PLANTS, DIESEL	
Routing nightmares of water conditioning.....	715	Installations for U. S. merchant marine.....	203
PATENT INQUIRY.....	186, 263, (Ed) 427, 483, (Ed)	POWER PLANTS, HYDROELECTRIC	
PATENT SYSTEM		Modern trends in design of.....	575
Changes before Congress.....	638	POWER PLANTS, STEAM	
PATENTS		Comparative economy of generating steam with anthracite, bituminous coal, and fuel oil, for industrial plants in New York area.....	804
Congress acts.....	699	Design trends.....	581
Data wanted.....	483	Economics of, for joint utility and industrial service.....	121, (C)
Protection necessary.....	462	Installations for U. S. merchant marine.....	203
Senator O'Mahoney's views on (A).....	227	Superposed unit at L Street Station, Boston Edison Co.....	519
Trade associations (BR).....	80	Variable-pressure system of operation.....	292
PATENTS AND ENGINEERING.....	531	PREFABRICATED HOUSES	
PATTERSON, W. J.		The case for prefabrication.....	787
New I.C.C. commissioner.....	679	PREPAREDNESS. <i>See also</i> Army Aviation, Army Ordnance, Military Strength, National Defense, Naval Vessels, War. America looks to her guns.....	273
PELTON WATER WHEEL		Committee to review educational orders of War Department.....	748
History of.....	447, 511, (C)	National Industrial Preparedness Dinner.....	328
PERRY, H. M.		Practice orders awarded by the army.....	568
Quarter-turn belt drive (C).....	927	Strategic minerals.....	943
PERRY, THOMAS D.		Trade cotton for rubber.....	700
Exposure tests on plywood (C).....	319	War Resources Board appointed.....	774
PETROLEUM. <i>See also</i> Fuel, and headings under Oil.		World of today (A).....	465
Oil treatment of coal (A).....	681	PRESSURE VESSELS	
PETROLEUM REFINING		Creep in tubular pressure vessels (C).....	757
Design and operation of De Flores furnaces.....	503	PRICE FIXING	
Gas-turbine supercharger for Houdry oil-refining process.....	647	And fair-trade laws.....	210
PHOTOELASTICITY		PRICE SETTING	
Conference on.....	942	Mechanistic and dynamic.....	(BR) 226, (BR) 392, (C) 394
Slicing models with light beams (A).....	469	PRICES	
PHOTOGRAPHIC EMULSIONS		Committee on cost-price relationships formed.....	420
Spectrum, energy distribution, density curves, wedge spectrograms, and sensitizing diagrams.....	731	PRIMING. <i>See</i> Steam Quality.	
PHOTOGRAPHY		PRIZES. <i>See</i> Honors and Awards.	
Annual-Meeting exhibit (1938).....	91	PROCESS LAGS	
Annual-Meeting exhibit (1939).....	763	Heat transients visualized by the "Hydrocal" (C).....	319
.....	24	PRODUCT ENGINEERING	
Centenary of.....	562, 628, 697	Development of new products.....	661
Photographic study of steam-boiler furnaces in operation.....	729	PRODUCTION, ORGANIZATION OF. <i>See</i> Management.	
PHYSIOLOGY		PROFESSIONAL IDEAL (Ed).....	105
And air conditioning.....	141	PROFESSIONAL RECOGNITION	
For the engineer.....	8	Summary of E.C.P.D. report.....	29
PIGOTT, STEPHEN J.		PROFESSIONS	
Awarded A.S.M.E. Medal.....	50	Professional aspects of medicine, law, and engineering.....	196
PIPE		PROPELLERS. <i>See</i> Air Propellers, Ship Propellers.	
A.S.T.M. issues specifications for H-T and H-P piping.....	700	PUBLIC SERVICE	
New American standard for (A).....	33	How can engineers help?.....	743
PIPE FITTINGS. <i>See</i> Welding Fittings.		PUBLIC WORKS	
PIPING		Economic effects of.....	210
Influence of steam-flow metering equipment on piping design (C).....	547	Technical Public Works Committee formed (A).....	229
PITOT TUBES		PUMPS	
Simplified traverse for.....	22	High-pressure slush pump.....	727
PLANNING		PURCHASING POWER	
National, discussed by A.E.C.	176	Effects of attempts to raise.....	209
PLANT INSPECTIONS		PYROSCOPE	
New England invites engineers (Ed)....	643	Heat protection device for cameras.....	730
PLANT LAYOUT		Q	
For the small plant.....	374	QUICK FREEZING. <i>See</i> Frozen Foods.	
PLASTICS		R	
Booklet proposed by committee.....	854	RADIO FACSIMILE. <i>See</i> Facsimile.	
"Compreg" used for aircraft propellers (A).....	232	RAIL ADHESION	
"Plastic" airplane.....	546	Coefficient of.....	583
Service-temperature flow characteristics of thermoplastics.....	892	RAILROAD CARS	
This modern age of plastics (A).....	836	Lightweight passenger rolling stock (abstract).....	880
PLYWOOD		RAILROAD CARS AND TRAINS	
Exposure tests on (C).....	319	Survey.....	871
Modern timber construction.....	791	RAILROADS	
PORCELAIN ENAMEL		Braking high-speed trains.....	583
Reflectivity of.....	137	Railway-highway competition in Great Britain (A).....	683
POREY, CHESTLEY J.		RAILWAY MECHANICAL ENGINEERING	
Rupture under triaxial stress (C).....	477	Corrections and additions to 1938 report of Railroad Division Committee RR6 Survey.....	149
POTONNÉE, GEORGES		Progress in, 1938-1939.....	863
Centenary of photography.....	24	RATHBONE, THOMAS C.	
POTTER, A. A.		Fatigue and corrosion fatigue of steels (C).....	318
Engineering's part in the development of civilization (BR).....	323	RAUTENSTRAUCH, WALTER	
Federal government and research.....	376	Industrial price policies and economic progress (BR).....	392
RAYMOND, F. E.		DIRECTS patent inquiry.....	263
REFLECTING SURFACES		REES, ROBERT IRWIN	
Reflectivity of various materials.....		Biographical memorial booklet.....	158
REFRIGERATION. <i>See also</i> Frozen Foods.		REFRIGERATION	
Freezing human diseases (A).....		Freezing human diseases (A).....	754
Vapor charts (BR).....		Vapor charts (BR).....	840
REFUGEES		REGENERATIVE BRAKING. <i>See</i> Brakes.	
Humanitarian engineer (A).....		REGISTRATION OF ENGINEERS. <i>See</i> Engineers' Registration.	
REID, D. G.		REID, D. G.	
Influence of steam-flow metering equipment on piping design (C).....		Influence of steam-flow metering equipment on piping design (C).....	548
RESEARCH. <i>See also</i> National Advisory Committee for Aeronautics		RESEARCH	
Aeronautical (Ed).....		Aeronautical (Ed).....	106
Air conditioning (A).....		Bills introduced in Congress.....	141
Building-materials fellowship.....		Building-materials tests (A).....	264
Chilled-car-wheel project.....		Committee on cost-price relationships formed.....	186
Committee on cost-price relationships formed.....		Cottonseed processing.....	420
Expenditures for, by universities.....		Expenditures for, by universities.....	131
Function of management.....		Governmental and other agencies for.....	373
National-aid bill proposed.....		National-aid bill proposed.....	376
National resource (Ed).....		National resource (Ed).....	263
Note on new British laboratory (A).....		Note on new British laboratory (A).....	194
Processing and marketing of crops		Processing and marketing of crops	310
.....		Program of coal research.....	438, (C) 925
Relationship of the Federal Government to.....		Relationship of the Federal Government to.....	419
Services of Engineering Societies Library.....		Services of Engineering Societies Library.....	419
Sugar-cane milling, tests.....		Sugar-cane milling, tests.....	222
W.P.A. summary and index of.....		W.P.A. summary and index of.....	368
RÉTHI, LILI		RÉTHI, LILI	
Enrichment (Ed).....		Enrichment (Ed).....	97
RHODIUM		RHODIUM	
Plating, for light reflectors.....		Plating, for light reflectors.....	140
RICHARDSON, EDWARD ADAMS		RICHARDSON, EDWARD ADAMS	
Price-making (C).....		Price-making (C).....	394
RIDGWAY, ROBERT		RIDGWAY, ROBERT	
An appreciation.....		An appreciation.....	158
RIFLES. <i>See</i> Army Ordnance.		RIFLES. <i>See</i> Army Ordnance.	
RINGELMANN CHARTS. <i>See</i> Smoke Indicators.		RINGELMANN CHARTS. <i>See</i> Smoke Indicators.	
ROBERTS, PERCIVAL		ROBERTS, PERCIVAL	
Fifty-Year Member.....		Fifty-Year Member.....	50
ROCK WOOL. <i>See</i> Mineral Wool.		ROCK WOOL. <i>See</i> Mineral Wool.	
ROSS, JAMES D.		ROSS, JAMES D.	
Biographical sketch of...		Biographical sketch of...	383
RUBBER		RUBBER	
As an engineering material (C).....		As an engineering material (C).....	241
Bonding of, to metal (A).....		Bonding of, to metal (A).....	165
Design data available (C).....		Design data available (C).....	242
From 1839 to 1939 (A).....		From 1839 to 1939 (A).....	829
Misconceptions about (A).....		Misconceptions about (A).....	237
Present-day applications of (A).....		Present-day applications of (A).....	165
Testing of (C).....		Testing of (C).....	242
RUBBER SPRINGS		RUBBER SPRINGS	
Spencer-Moulton railroad spring (C)....		Spencer-Moulton railroad spring (C)....	241
RUBBER SUBSTITUTES. <i>See</i> Synthetic Rubber.		RUBBER SUBSTITUTES. <i>See</i> Synthetic Rubber.	
RUBBER WRAPPER FOR FOODS (A).....		RUBBER WRAPPER FOR FOODS (A).....	317
RUPTURE		RUPTURE	
Of materials under triaxial stress. 107, (C)		Of materials under triaxial stress. 107, (C)	477
RUSSIA		RUSSIA	
Technical museums in Soviet Russia.....		Technical museums in Soviet Russia.....	735
RUTGERS UNIVERSITY		RUTGERS UNIVERSITY	
Home-study courses.....		Home-study courses.....	853
Industrial conference.....		Industrial conference.....	697
.....		769

S

- SACKETT, R. L.
Cost of apprenticeship (C)..... 395
- SAFETY**
Aircraft accidents (A)..... 471
And factory layout (A)..... 238
Machinery accidents in 1938 (A)..... 680
New York safety meeting..... 328
- SAFETY CODES.** *See* Codes.
- ST. PATRICK
Patron Saint of mechanical engineers..... 258
- SAVAGE IN A UTILITY COMPANY** (A)..... 617
- SANDERS, NEWELL. Fifty-Year Member
Life of..... 50
- SCHMELTZER, J. E.
Engineering developments in the United States merchant marine..... 203
- SCHMITTER, W. P.
Load capacity of gears (A)..... 232
- SCHWAB, CHARLES M. (Ed)..... 708
- SCIENTIFIC MANAGEMENT.** *See* Management.
- SCOTT, CHARLES F.
Testimonial dinner to..... 768
What is engineering experience?..... 305
- SCREW THREADS**
Grinding of (C)..... 243
- SECURITY**
Human relations in industry (BR)..... 580
Price of (BR)..... 463
- SEELY, WARNER
Industry, labor, and the public (C)..... 244
- SELLERS, COLEMAN, 3RD
Motor drives and electric controls on machine tools (C)..... 246
- SHEDFIELD MUSEUM..... 382
- SHERMAN, RALPH A.
Smoke-density measurements (C)..... 75
- SHERWOOD, T. K.
A simplified pitot-tube traverse..... 22
- SHIP PROPELLERS**
Voith-Schneider ship propeller (A)..... 834
- SHIPS.** *See also* Marine Engineering, Naval Vessels.
Advantages of gas-turbine drive..... 651
American superliners (A)..... 919
Engineering developments in the U. S. merchant marine..... 203
German, using Benson boilers..... 221
Isolation of engine noise (A)..... 35
Liner America..... 205
Marine steam power plants (A)..... 686
Mechanical-engineering problems in marine transport (abstract)..... 882
New Mauritania..... 564
The Panama, World of today (A)..... 465
Twin-Hull (A)..... 310
- SHOEMAKER, G. T.
Nominated for manager of A.S.M.E. 633
- SHORT, BYRON E.
Influence of steam-flow metering equipment on piping design (C)..... 548
- SIKORSKY, IGOR I.
Aeronautics and national defense..... 523
- SILICOSIS
Sampling air impurities (A)..... 468
- SKAPERDAS, G. T.
Simplified pitot-tube traverse..... 22
- SKLENAR ROTARY ENGINE (A)..... 38
- SLAG WOOL. *See* Mineral Wool.
- SMITH, ARNOLD A.
Combustion of wood-waste fuels (C)..... 621
- SMITH, E. S.
Notes on flowmetering published (C)..... 552
- SMITH, E. W. P.
Hard-surfacing processes and materials (C)..... 396
- SMOKE**
Combustion space, setting height, smoke (abstract)..... 896
Defining equitable limits of dust emission from stacks..... 895
- SMOKE INDICATORS AND RECORDERS**
Smoke-density measurements (C)..... 71
- SNELLING, H. H.
Trade associations in law and business (BR)..... 80
- SNOW CRUISER** (A)..... 684
- SOCIAL RESPONSIBILITY**
Of the engineer..... 653
- SOCIAL SECURITY.** *See* Security.
- SOCIAL SECURITY ACT**
Changes proposed..... 263

- SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION**
Elects officers..... 627
Statistics on engineering students (A)..... 238
- SOCIETY OF AUTOMOTIVE ENGINEERS**
World Congress..... 328, 492, 542
- SOLAR HEAT**
Utilization of (A)..... 388
- SOUND.** *See also* Noise.
Isolation of engine mountings (A)..... 35
- SOUTH**
Industrial renaissance of the..... 281
- SPECIFIC HEATS OF GASES**
New equations for (A)..... 389
- SPECTROGRAPHIC ANALYSIS** (Ed)..... 427
- SPILHUS, ATHELSTAN F.
Development in meteorology.....
- SPINK, L. K.
Influence of steam-flow metering equipment on piping design (C)..... 549
- STANDARDS**
Allowances above finished sizes for rough-cutting sizes of lumber (A).....
A.S.T.M. changes method of publishing standards..... 555
- Index available for A.S.T.M. standards..... 336
Index of, available from A.S.A. 419
New American pipe standard (A)..... 33
Proposed for tractor distillate (A)..... 617
Size and shape of vegetables (A)..... 39
Status of twelve codes..... 54
Steam-turbines and generators (A)..... 38
Trade associations (BR)..... 80
- STANIER, WILLIAM A.
Lightweight passenger rolling stock (abstract)..... 880
- STARRE, G. W.
Present-day popular economic thought..... 209
- STATISTICAL METHODS SYMPOSIUM**.....
- STATISTICS**
Summer course in, at M.I.T.
- STEAM.** *See also* Superheated Steam, Desuperheating.
Economics of a power plant for joint utility and industrial service.....
- STEAM BOILERS.** *See* Boilers.
- STEAM CONDENSERS**
Tube-scale prevention.....
- STEAM-GENERATING TUBES.** *See* Boiler Tubes.
- STEAM QUALITY**
Carry-over in steam..... 717, 720
- STEAM TABLES**
New Callendar steam tables (BR)..... 839
Vapor charts (BR)..... 840
- STEAM-TURBINE GENERATORS**
Design trends..... 582
Standards for (A)..... 38
- STEAM TURBINES**
Design of Union Pacific steam-electric locomotive..... 709, 817
- Design trends in..... 582
- Efficiencies of..... 668
- Industrial and auxiliary..... 588
- Installations for U. S. merchant marine..... 203
- Rotative boiler turbine (A)..... 835
- Variable-pressure operation..... 292
- STEEL**
Austempering steel (A)..... 683
Booklet on industry (A)..... 156
- Comparative creep strength of alloy steels..... 593
- Fatigue and corrosion fatigue of (C)..... 318
- Researches in metallurgy (A)..... 751
- "Semisteel" a misnomer..... 458
- Stainless steel in unfired pressure vessels (Boiler Code).....
- STEEL PLANTS**
U. S. Steel's Irvin plant (A)..... 156
- STELLITE**
For light reflectors..... 140
- STERN, ARTHUR C.
Receives Junior Award..... 49
- STEVENS, JOHN FRANK
Awarded Hoover Medal..... 97, 228
- STEVENSON, A. R., Jr.
Development of new products..... 661
- Requisites for engineering leadership..... 903
- STOKERS**
Combustion, small underfeed stokers (A)..... 682
- STORCH, H. H.
Coal hydrogenation..... 605
- STOREROOMS**
Management of..... 374
- STRAUB, F. G.**
Boiler-water treatment..... 142
- Corrosion in partially dry steam-generating tubes..... 199, (C)..... 552
- STREAM POLLUTION.** *See* Water Pollution.
- STRESS**
Triaxial, considerations on rupture under..... 107, (C)..... 477
- STRUCTURES**
Modern timber construction..... 791
- STUCKEY, H. P.
Immersion quick freezing (C)..... 925
- SUGAR-CANE MILLING**
Problems in..... 365
- SUPERHEATED STEAM**
Control of superheat..... 582
- SUPLEE, HENRY H. Fifty-Year Member..... 50
- SURFACE HARDENING**
Processes and materials for (C)..... 395
- SWOPE, GERARD
Delivers 1938 Towne lecture..... 50
- Mechanical Engineering: Materials, Methods and Men..... 5
- SYNTHETIC FIBERS**
Nylon, substitute for silk (A)..... 35
Synthetic wool from milk..... 664
- SYNTHETIC RUBBER** (C)..... 320
Lastics (A)..... 918
- SYNTHETIC SILK.** *See* Synthetic Fibers.

T

- TALMAGE, A. A.
A.S.M.E. Publications "back talk" (C) .. 759
- TANKS, FIGHTING**
Development, status, and manufacture..... 13
- TARIFF
Invisible tariff (BR)..... 790
- TAXES**
World of today (A)..... 465
- TAYLOR, C. FAYETTE
Development in power plants..... 153
- TAYLOR, E. HALL
New developments in welding fittings.... 370
- TAYLOR, R. BROOKS
Immersion quick freezing..... 437, (C) .. 925
- TAYLOR, WILLIAM M. Fifty-Year Member..... 50
- TECHNICAL PAPERS**
New rules and procedure for..... 59
- TECHNICAL PUBLIC WORKS COMMITTEE**
Formation and personnel of (A)..... 229
- TELEGRAPH INDUSTRY**
Carrier circuits, varioplex, and facsimile..... 317
- TELESCOPES**
McDonald Observatory (A)..... 385
- TEMPERATURE INDICATORS**
Thermopaints (A)..... 471
- TEMPERATURE MEASUREMENT**
Of gases (A)..... 545
- TEMPERATURE MEASUREMENT AND CONTROL**
Symposium planned..... 253, 562, 845
- TEMPORARY NATIONAL ECONOMIC COMMITTEE**
Program of..... 163
- Report of A.E.C. of testimony before..... 159
- Senator O'Mahoney's views on patents (A)..... 227
- TERMITES**
Preventatives against..... 792
- TESTING EQUIPMENT**
Corrosion in partially dry boiler tubes... 199
- Creep-testing apparatus..... 591
- Diamond hardness tester (A)..... 753
- Electric testing of products by sound (A) .. 831
- Friction tests on rubber tires..... 127
- Hardness tester (A)..... 753
- Measuring thickness of metal from one surface (A)..... 231
- Measuring torsional vibration..... 216
- "Pinching-off" effect..... 108
- Spectrographic analysis (Ed)..... 427
- Sugar-cane milling..... 368
- Torsion tests (A)..... 164
- TESTING MATERIALS.** *See also* Creep of Metals.
Advantages of torsion tests (A)..... 164
- Nondestructive testing (A)..... 231
- Plastometer and Durometer readings on rubber (C)..... 242
- Rupture under triaxial stress..... 107, (C) .. 477
- Service-temperature flow characteristics of thermoplastics..... 892
- Strength and hardness of cast irons..... 456

TESTING MATERIALS (<i>continued</i>)	
Strength of metals at elevated temperatures	589
Tests on Compreg (A)	232
TEXTILES	
Flax in the cotton industry (A)	752
THERMOPAINTS (A)	471
THIOKOL	
Rubber-like substance (C)	320
THOMSON, ELIJAH	
Commemorative meeting for	310
THORSON, A. W.	
Possibilities for utilization of pulverized-coal ash (C)	477
THREAD-GRINDING PRACTICE (C)	243
THUMIM, CARL	
Quick-acting release latches	807
THURSTON LECTURE. <i>See</i> Honors and Awards—Robert Henry Thurston Lecture.	
THURSTON, ROBERT HENRY	
Centennial celebration at Cornell	560, 696, (Ed) 780, 934
TILT HAMMERS	
Sheffield Museum (A)	382, (C) 756
TIMBER	
Bridge-design contest	264
Preservatives for	792
Modern timber construction	791
TIMBER CONNECTORS	
Modern timber construction	791
TIME-AND-MOTION STUDY	
Science of production organization (BR)	374
TIMOSHENKO, STEPHEN P.	
Awarded Lamme Medal of the S.P.E.E.	627
Honored by Applied Mechanics Division	51
TOOLING	
Economic aspects of (A)	239
TOOLS. <i>See also</i> Machine Tools.	
Hard chromium plating (A)	830
Manufacture and use of high-speed cutting tools (A)	387
Single-point, for metal cutting; design, angles, materials	349
TORSION TESTS	
Advantages of (A)	164
TOTALITARIAN STATES	
Professor Bridgman refuses assistance to	309
TOWNE LECTURE. <i>See</i> Honors and Awards—Henry Robinson Towne Lecture.	
TRADE ASSOCIATIONS	
Legal and illegal acts of (BR)	80
TRANSMISSIONS	
Hydra-matic transmission (A)	922
Type of, for Diesel rail cars (A)	33
TRANSPORTATION	
Abstracts of four British papers dealing with airplanes, motor vehicles, railroad cars, and ships	
Conference on new technologies in transportation	
Railway-highway competition in Great Britain (A)	
TSCHAPPAT, WILLIAM H. Honorary Member A.S.M.E.	
TUBES. <i>See</i> Boiler Tubes, Steam Condensers.	
TUCKER, DONALD S.	
Debts and recovery (BR)	28
Promises men live by (BR)	27
Uninvested savings (BR)	907
TURBINES. <i>See</i> Gas Turbines, Hydraulic Turbines, Steam Turbines.	

U

UNEMPLOYMENT. <i>See also</i> Employment.	
Day by day	381

UNEMPLOYMENT (<i>continued</i>)	
Forty plus (Ed)	779
Technological, in industry	212
UNEMPLOYMENT BENEFITS	
Use of reserve funds	212
UNIONS FOR ENGINEERS. <i>See</i> Engineers' Unions.	
UNIONS OF THEIR OWN CHOOSING (BR)	740
UNITED ENGINEERING TRUSTEES, INC.	
Annual report of	98
UNITED STATES HOUSING AUTHORITY	
Cos. of program	785
UNITED STATES MARITIME COMMISSION	
Engineering developments in the merchant marine	203
UNIVERSITY OF TEXAS	
Homer Price Rainey inauguration	772
V	
VALUATION OF PLANTS	
New ideas on	539
VALVES	
High-pressure discharge valve for sludge	609
VAN DUZER, R. M., JR.	
Creep in tubular pressure vessels (C)	757
Influence of steam-flow metering equipment on piping design (C)	551
VAN POPPELEN, F. J.	
Factory layout and safety (A)	238
VIBRATION	
Noise reduction in ships (A)	35
Torsional, measuring instrument	216
VIOLA, BARTHOLOMEW	
Centrifugal-machine applications (C)	758
VOITH-SCHNEIDER SHIP PROPELLER (A)	834
W	
WACHS, THEODORE	
Control of dust explosions in industrial plants (C)	320
WAGE-PAYMENT PLANS	
All he can get (Ed)	193
WAGES	
Floor under wages: British style (BR)	676
High wages and purchasing power	211
Minimum wages in Australia (BR)	148
Survey by Toledo Associates (A)	156
WAGNER ACT. <i>See</i> National Labor Relations Act.	
WALKER, H. B.	
Immersion quick freezing (C)	926
WAR. <i>See also</i> Army Aviation, Army Ordnance, Military Strength, National Defense, Naval Vessels, Preparedness.	
On the four fronts (A)	915
WATER CONDITIONING	
Causes of embrittlement (C)	142
Corrosion of dry areas of boiler tubes	199
Routing nightmares of	715
WATER POLLUTION	
By industries	359
Legislation proposed	263
WATT, JAMES	
Ford and Watt (Ed)	707
WEATHER	
Radiometeorograph stations	150
WEAVER, JAMES R.	
Elected president of Society of Tool Engineers	419
X	
XALOY	
Hard-surfacing material (C)	395, 397
Y	
YOUTH AND LABOR (Ed)	272
Z	
ZIMMERMAN, ROBERT. Wins scholarship	697
ZUCROW, M. J.	
Influence of steam-flow metering equipment on piping design (C)	551

Index to A.S.M.E. Transactions

Volume 61, 1939

The A.S.M.E. Transactions for 1939 was issued monthly. Four of the twelve issues are the *Journal of Applied Mechanics*, the page numbers of which are preceded by the letter A.

The Record and Index for the year 1939 was issued as supplements, one in February, 1939, and one in January, 1940. The page numbers for these supplements are designated by the symbol RI, and the February supplement contains its own index.

(BR) denotes book review; (D) discussion of a paper.

ADAMS, COMFORT A.
Income versus production (D)..... 46

AERODYNAMICS
Modern developments in fluid dynamics
(Br)..... A-191

AIR-IMPINGEMENT CORROSION. *See* Steam Condensers.

AIR PREHEATERS
For pulverized-coal firing (D)..... 64

AIRCRAFT
Comparison of initial climbs of airplane, autogiro, and helicopter..... 186

AIRCRAFT PROPELLERS. *See* Airscrews.

AIRPLANES
Comparison of power requirements with those of autogiros..... 185

AIRSCREWS
Lift production with..... 179

AIRSHIPS
Stress model of (D)..... A-33

AITON, J. M.
Stresses in a welded pipe connection (D)..... 167

ALCOCK, J. F.
Pulsating air velocity measurement (D)..... 306

ALDINGER, H. K.
Chlorination of condenser cooling water (D)..... 651

ALLEN, O. F.
Five years progress of oil and gas power (D)..... 591

ALLIEVI, LORENZO
Air chambers for discharge pipes (D) 441, (D) 445

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Committees. *See* Index..... RI-43

Honorary members. *See* Index..... RI-43

Honors and Awards. *See* Index..... RI-43

Local Sections. *See* Index..... RI-43

Past-Presidents. *See* Index..... RI-43

Professional Divisions. *See* Index..... RI-43

Representatives on other activities. *See* Index..... RI-43

Society records. *See* Index..... RI-43

Student Branches. *See* Index..... RI-43

Woman's Auxiliary. *See* Index..... RI-43

AMPLIFIERS
Piezoelectric gage..... 201

ANDERSON, JOHN W.
Some data on Diesel-electric switching locomotives (D)..... 37

ANDRIOLA, A. D.
The Vectoroscope (D)..... 410

ANGULARITY INDICATOR
For flow of liquids..... 481, 504

ANGUS, R. W.
Air chambers for discharge pipes (D)..... 447

Errors of pitot tubes (D)..... 493

Operation of emergency shutoff valves in pipe lines (D)..... 75

ARMY ORDNANCE
Interpretation of a gun failure..... 191

Piezoelectric gage for gun pressures..... 197

ATMOSPHERIC POLLUTION. *See* Smoke Abatement.

ATOMIZATION
In oil burners..... 373

AUTOGIROS
Development of the Focke helicopter..... 177

AUTOMATIC CONTROL AND CONTROLLERS.
See also Pressure-Responsive Elements.

Application of, in the oil industry (D)..... 350

Application of, to continuous processes (D)..... 358

Pressure-responsive elements (D)..... 354

Quantitative analysis of process lags (D)..... 67

Recent classification of regulator response (D)..... 362

Regulator responsive to rate of change (D)..... 366

Temperature controllers, application of (D)..... 363

Temperature controllers, classification of (D)..... 365

ISSUE	PAGE NUMBERS
January	1- 80
February	81-176
April	177-272
May	273-368
July	369-464
August	465-560
October	561-656
November	657-740

Journal of Applied Mechanics

March	A- 48
June	A- 49-A- 96
September	A- 97-A-144
December	A-145-A-192

AUTOMATIC CONTROL AND CONTROLLERS
(continued)

Terminology (D)..... 358

AXLES. *See* Railroad Axles.

B

BAILEY, ALEX D.
Chlorination of condenser cooling water (D)..... 654

Slag and deslagging of steam-generating equipment (D)..... 39

BAILEY, E. G.
Modern boiler furnaces..... 561

Turbine-electric steamship *J. W. Van Dyke* (D)..... 216

BAILEY, NEIL P.
Pulsating air velocity measurement..... 301

BAKELITE
Creep, elastic hysteresis, and damping in, under torsion..... A-79

BAKER, J. G.
Mathematical-machine determination of the vibration of accelerated unbalanced rotor..... A-145

Methods of rotor-unbalance determination..... A-1, (D) A-131

BAKER, M. D.
Mechanical purification of steam within the boiler drum..... 711

BALANCING. *See* Engines, Locomotives, Vibration.

BALL, E. BRUCE
Methods employed to remedy water-hammer shock in pumping systems..... 5, (D) 450

BASCOME, GEORGE L.
Turbine cylinder joints (D)..... A-31

BEAMS
Collision of spheres with..... A-69

Theory of flexure for beams with non-parallel fibers..... A-122

BEAN, HOWARD S.
Effect of pulsations on orifice meters (D)..... 312

Nozzle coefficients (D)..... 238

Piton tubes in large pipes (D)..... 473

Some results from research on flow nozzles (D)..... 40

BEAN, L. G.
Pressure-type thermometer systems (D)..... 357

BEARING PRESSURES AND CRACKS. A-49

BEARINGS. *See also* Friction, Lubrication.

Air-film bearings of graphite (D)..... 344

Behavior of different bearing materials under wear conditions (D) 343, (D) 345

Boundary friction in bearings at low loads..... A-109

Clearances depend on speed and load (D)..... 160

BEARINGS (continued)

Influence of pressure on viscosity (D)..... 160

Railway, "Disc-Flo" (D)..... 270

Running in of (D)..... 345

Thick-film lubrication of full journal bearings of finite width..... A-117

Wearing of (D)..... 345

BEHAR, M. F.
Application of temperature controllers (D)..... 363

Pressure-responsive elements (D)..... 356

BELBY LAYER. 329, (D) 331, 333, 341

BETTLER, S. R.
Effect of high temperatures and pressures on cast-steel venturi tubes (D)..... 248

Effect of pulsations on orifice meters..... 309

Some results from research on flow nozzles (D)..... 40

BELL, H. C.
Design of flanged joints for valve bonnets (D)..... 71

Correction..... 75

BELLOWS. *See* Pressure-Responsive Elements.

BENOIT, A. W.
Twenty years of machine activity in the woolen-and-worsted industry..... 251

BERGERON, LOUIS
Resurge phase of water hammer (D)..... 441

BERGMAN, DONALD J.
Application of automatic control in the oil industry (D)..... 350

BERNHARD, R. K.
Steady oscillations of systems (D)..... A-91

Yielding of mild steel (D)..... A-89

BETZ, L. DREW
Sodium sulphite in high-pressure steam boilers (D)..... 269

BIBLIOGRAPHIES

Balancing of locomotives A-184, 529, 542

Bearings..... A-113

Boiler performance with oil and natural gas..... 732

Coal-preparation, analysis, ash fusibility..... 698

Creep..... A-85

Elasticity..... A-85, A-170

Flow nozzles and orifices..... 238

Friction..... 640

Friction and wear..... 342

Gas burners and combustion of gases..... 677

Heat transmission..... 710

Locomotive balancing..... A-184, 529, 542

Lubrication..... 640

Management..... 299

Metals, wear of..... 342

Organization..... 299

Photoelasticity..... A-155

Piton tubes..... 492

Plates..... A-116, A-170

Rubber, mechanical properties of..... 158

Spherical shells..... A-102

Springs, helical..... 648

Steam-quality measurements..... 718

Steel, attack on, in boilers..... 621

Strength of materials..... 585

Strength of wood..... 261

Stresses, two-dimensional..... A-66

Vibration..... A-130

Water hammer..... 115

Wear and lubrication..... 342

BIOT, M. A.
Calculating free vibrations (D)..... A-33

BISCHOF, GUSTAVE J.
Cooling-tower fundamentals and their application to cooling Diesel and gas engines..... 25, (D) 452

BITTER, FRANCIS
Probleme der Technischen Magnetisierungskurve (BR)..... A-46

Procedures in experimental physics (BR). A-192

BLACK, A. R.
Atomization of oil by small pressure atomizing nozzles..... 373

BLAST-FURNACE GAS. *See* Gas Fuel.

BLIZARD, JOHN
Combustion of pulverized coal (D)..... 56

BOETCHER, H. N.	
Condenser-tube life as affected by design (D).....	131
BOILER CORROSION. <i>See also</i> Feedwater Treatment.	
Attack on steel in high-capacity boilers as result of overheating due to steam blanketing.....	597
Caustic embrittlement.....	287
Changes in a high-pressure drum to eliminate recurrence of cracks due to corrosion fatigue.....	507
"Hiding out" of soluble compounds.....	602
Relation of pH value of water to temperature.....	287
Sodium sulphite in boiler water (D).....	53
Sodium sulphite in high-pressure boilers (D).....	269
BOILER FEEDWATER. <i>See</i> Boiler Corrosion, Feedwater Treatment.	
BOILER FURNACES. <i>See also</i> Boilers, Stokers.	
Bagasse furnaces.....	685
Black-liquor recovery units.....	286
Design of high-capacity (D).....	165
Energy distribution in the pulverized-coal furnace (D).....	263
Heat-release rates.....	84, 165
Method of comparing furnace operating results.....	167
Pulverized-coal and wood.....	561
Pulverized-coal explosions (D).....	65
Recent trends in design.....	81
Tanker S.S. J. W. <i>Van Dyke</i> (D).....	216
Wood and pulverized-coal.....	282
BOILER OPERATION	
Boiler-plant performance with natural-gas firing.....	727
BOILER SLAG	
Ash-fusion temperatures and slagging.....	561
Lancing of boiler tubes (D).....	40
Prevention and removal of (D).....	39
Pulverized-coal furnaces (D).....	63
BOILER TESTS	
Bagasse-fuel tests.....	685
Burning pulp-mill waste from sulphite mill.....	679
Modern boiler furnaces.....	561
BOILER TUBES	
Creep tests on.....	239
Investigation of failures of.....	599
Safe operating temperature.....	286
BOILER WATER. <i>See</i> Boiler Corrosion, Feedwater Treatment.	
BOILERS. <i>See also</i> Power Plants.	
Attack on steel in high-capacity boilers as result of overheating due to steam blanketing.....	597
Changes in a high-pressure drum to eliminate recurrence of cracks due to corrosion fatigue.....	507
Drawings of installations (D).....	164
Effect of holes in bursting pressure of cylindrical pressure vessels (D).....	516
Effect of size on cost of steam.....	274
High-pressure high-temperature, on S.S. J. W. <i>Van Dyke</i>	209
Lignite-burning steam-generators.....	659
Mechanical purification of steam within the boiler drum.....	711
Modern installations, diagrams.....	278
New and unusual types.....	283
Performance of.....	281
Selection of, for industrial plants.....	86
Superheat control in (D).....	63
Tabulation of characteristics of modern pulverized-coal fired.....	82
Tabulation of characteristics of modern stoker-fired.....	83
Types of (D).....	163
BOLT PITCH	
In flange joints (D).....	A-31
BOLTER JOINTS. <i>See</i> Flange Joints.	
BOLTS	
Relaxation of (D).....	72, (D) A-31, 544
Stresses in, due to tightening (D).....	72
BONNEVILLE	
Kaplan turbines at.....	97
BOOK REVIEWS	
Alchemy, the newer.....	A-38
Buckling, statics of structures.....	A-47
Elasticity, plasticity, and structure of matter.....	A-43
Elementary matrices.....	A-192
Erdbaumekanik und Baupraxis, Eine Klarstellung.....	A-44
Fatigue of metals.....	A-93
Fluid mechanics, an introduction.....	A-45
Fluid mechanics for hydraulic engineers.....	A-93
Geometry of determinantal loci.....	A-191
Harmonic analysis.....	A-45
Heat and thermodynamics.....	A-42
Combustion of light internal-combustion engines.....	A-95
Men of mathematics.....	A-37
Modern developments in fluid dynamics.....	A-191
BOOK REVIEWS (continued)	
Principles of powder metallurgy.....	A-41
Problems of the magnetizing curve.....	A-46
Procedures in experimental physics.....	A-192
Railway news.....	A-46
Recollections and reflections (physics).....	A-38
Science and human experience.....	A-39
Scientist in action.....	A-37
Sound.....	A-48
Springs.....	A-48
Statically indeterminate frameworks.....	A-40
Statically indeterminate stresses.....	A-43
Strength of materials.....	A-95
Theorie der Setzung von Tonschichten.....	A-44
Theory and performance of axial-flow fans.....	A-45
Theory of modern steel structures.....	A-41
Theory of statically indeterminate structures.....	A-40
Thermodynamics.....	A-96
Vibration.....	A-93
Vibration problems in engineering.....	A-94
BOOTH, RALPH D.	
Trends in fuel-burning equipment and furnace design as shown by recent Eastern-Seaboard applications.....	81
BOSTON, O. W.	
Effect of size and shape of cut upon the performance of cutting fluids when turning S.A.E. 3140 steel.....	315
BOURDON TUBE. <i>See</i> Pressure-Responsive Elements.	
BOWMAN, R. A.	
Condenser performance with reduced cooling surface.....	133
BOYCE, J. C.	
Recollections and reflections (BR).....	A-38
The newer alchemy (BR).....	A-38
BOYD, JOHN	
Relaxation of materials at high temperature (D).....	551
BOYER, G. C.	
Cooling-tower fundamentals (D).....	452
Theory of elastic engine supports (D).....	460
BRACE, A. S.	
Thin oil films (D).....	331
BRISCOE, RALPH	
Combustion of pulverized coal (D).....	57
BRISTOL, E. S.	
Some fundamental considerations in the application of automatic control to continuous processes (D).....	358
BRUSHES. <i>See</i> Carbon Brushes.	
BUCKWALTER, T. V.	
Balancing reciprocating weights in steam locomotives (D).....	530
Locomotive axle testing (D).....	66
BUFFERS. <i>See</i> Railroad Buffers.	
BUILDING MATERIAL	
Heat conductivity of Cottrell blocks (D).....	60
BUKER, H. W.	
Five years' progress of oil and gas power (D).....	594
BURDICK, W. E.	
Deflection of helical springs under transverse loadings.....	623
BURNERS. <i>See</i> Combination Burners, Gas Burners, Oil Burners.	
BURTNER, EVERE	
Determination of the expansion forces in piping by model test (D).....	A-185
BUSINESS ORGANIZATION	
Design for modern business.....	291
C	
CAMPBELL, C. B.	
Practical aspects of turbine cylinder joints (D).....	A-31
CAMPBELL, O. F.	
Combination oil-and-gas burners (D).....	268
CAMPBELL, W. E.	
Studies in boundary lubrication.....	633
Thin oil films (D).....	331
Wear in lubrication problems (D).....	343
CANAN, W. D.	
Combustion of pulverized coal (D).....	63
CARBON BRUSHES	
Wearing tests of (D).....	344
CARMICHAEL, COLIN	
Pulsating air velocity measurement (D).....	307
CARNEY, B. R.	
Automatic control in the oil industry (D).....	352
CARR, HUGH R.	
Carbonaceous zeolites (D).....	159
CARTER, W. A.	
Chlorination of condenser cooling water (D).....	654
CAUSTIC EMBRITTLEMENT. <i>See</i> Boiler Corrosion.	
CAVITATION	
Centrifugal pumps, characteristics of.....	17
Cavitation limits for, chart.....	23
New parameter for.....	20
Thoma parameter.....	17
Condenser tubes.....	125
Resurge phase of water hammer.....	441
Tests on model turbines for Bonneville.....	101
CENTRIFUGAL MACHINES	
Types and applications of.....	415
CENTRIFUGAL PUMPS	
Cargo pumps of oil tanker.....	212, (D) 216
Cavitation characteristics of.....	17
Cavitation limits for, chart.....	23
New cavitation parameter for.....	20
Complete characteristics diagram.....	118
CENTRIFUGAL SEPARATION	
Theory of.....	416
CENTRIFUGAL STRESSES. <i>See</i> Stresses.	
CHAIN LINKS	
Stresses and deflections in, under cross forces.....	A-171
CHAPLIN, F. S.	
Deflection of helical springs under transverse loadings.....	623
CHLORINATION	
Of condenser cooling water (D).....	651
CHRISTIANSEN, J. E.	
Errors of pitot tubes (D).....	493
CHRISTIE, ALEXANDER GRAHAM	
Biography.....	RI-3
CHRISTY, WILLIAM G.	
Preparation of Illinois coal (D).....	459
CIRCUIT BREAKERS	
Water type available (D).....	289
CLARK, C. L.	
High-temperature-steam experience (D).....	400
CLARKE, CHARLES W. E.	
Industrial power.....	273
CLARKE, E. W.	
Pulverized coal-tar pitch as a fuel.....	577
CLAYPOOLE, WALTER	
Thin oil films.....	323
CLAYTON, DAVID	
Thin oil films (D).....	331
CLEGHORN, M. P.	
Five years' progress of oil and gas power (D).....	594
CLEMMITT, W. B.	
By-product fuels in the steel industry.....	665
CLORAN, EVERETT M.	
Rotary oil meters of the positive-displacement and current types (D).....	347
CLUTCHES	
Spring clutch.....	A-103
COAL. <i>See also</i> Pulverized Coal.	
Combustion of pulverized anthracite culm.....	283
Illinois, impurities in.....	1, (D) 459
Sulphur content of.....	4
COAL ASH	
Effect of preparation on ash fusibility as revealed by a study of selected Illinois coals.....	693
Fly ash reduced by washing coal.....	4, (D) 459
Reduction of, by washing.....	3, (D) 459
COAL PREPARATION	
Effect of, on ash fusibility as revealed by a study of selected Illinois coals.....	693
Problems related to preparation of Illinois coals.....	1, (D) 459
COAL PULVERIZERS	
Comparison of firing equipment.....	86
Tests on.....	369
COAL-TAR PITCH. <i>See</i> Fuel Pitch.	
COAL WASHING. <i>See</i> Coal Preparation.	
COBERLY, C. J.	
Problems in modern deep-well pumping (D).....	272
COKE-OVEN GAS. <i>See</i> Gas Fuel.	
COLE, E. SHAW	
Errors of pitot tubes (D).....	495
Pitot tubes in large pipes.....	465
COLE, EDWARD S.	
Pitot tubes in large pipes.....	465
COLEMAN, JOHN B.	
Income versus production (D).....	46
COLLISION. <i>See</i> Impact.	
COLORADO RIVER AQUEDUCT	
Water hammer in pumping plants of....	117
COLWELL, L. V.	
Effect of size and shape of cut upon the performance of cutting fluids when turning S.A.E. 3140 steel.....	315

- COMBINATION BURNERS**
Liquid, gaseous, and pulverized-fuel (D). 739
Oil and gas (D). 267
Pulverized-coke, fuel-oil, sludge, and gas. 701
- COMBUSTION.** *See also Fuel.*
Burning pulp-mill waste from sulphite mill. 679
Burning various types of oil-refinery fuels 699
Coal-pulverizer tests. 369
Combination oil-and-gas burners (D). 267
Energy distribution in the pulverized-coal furnace (D). 263
Factors influencing oil-burner performance. 373
Fuel oil (D). 56
Garbage in pulverized-coal furnaces (D). 60
Natural-gas boiler firing. 727
Pulverized coal. (D) 55, (D) 166
Pure oxygen for pulverized-coal. (D) 55, (D) 66
Sewage sludge (D). 56
Use of unusual and by-product fuels. 285
Velocity of flame propagation in mixtures of pulverized coal and air. 370
- CORCORDIA, C.**
Calculating free vibrations (D). A-36
- CONDENSER TUBES.** *See Steam Condensers.*
- CONDUCTIVITY.** *See Sound Conductivity.*
- CONDUITS.** *See Pipe.*
- CONTACT PRESSURES.** *See Bearing Pressures.*
- COOKE, HARTE**
Friction of reciprocating engines (D). 43
- COOLING TOWERS**
Application to cooling Diesel and gas engines (D). 452
Fundamental relationships in design of. 721
Fundamentals of, and their application to cooling Diesel and gas engines. 25
Comparison of open and closed systems 29
- CORROSION.** *See also Boiler Corrosion, Steam Condensers.*
Tests on materials in high-temperature steam. 392
- CORROSION FATIGUE**
In high-pressure boilers. 507
- COTTRILL BLOCKS**
Heat conductivity of (D). 60
- COX, I. E.**
Oil-bath-lubricated railway bearing (D). 271
- CRACKS**
Effect of, on contact pressure. A-49
- CRAIG, OLLISON**
Discharge temperatures from pulverizers. 369
- CRAYA, A.**
Air chambers for discharge pipes (D). 445
- CREEP**
Bakelite under torsion. A-79
Rubber springs. 157, (D) 463
- CREEP OF METALS**
Creep in tubular pressure vessels, tests. 239
Creep rate of Armco iron (D). 50
Creep rate of east carbon steel (D). 50
Effect of temperature on the creep strength of steels (D). 49
Experience with high-temperature-steam equipment. 386
"Flowability" of open-hearth wrought steel (D). 50
Relaxation of bolts (D). 72
Resistance to relaxation at high temperatures. 543
- CROFT, HUBER O.**
Locomotive axle testing (D). 66
- CULM.** *See Coal.*
- CUTTING FLUIDS.** *See Metal Cutting.*
- D**
- DAHLSTRAND, HANS**
High-temperature-steam experience (D). 398
- DAMPING.** *See Vibration.*
- DANEL, P.**
Air chambers for discharge pipes (D). 445
- DASHEFSKY, GEORGE J.**
The Vectroscope. 403
- DARBO, DAVID**
Turbine-electric steamship *J. W. Van Dyke* (D). 216
- DAVIDSON, K. S. M.**
Pressure-responsive elements (D). 354
- DAVIS, ALBION**
Operating methods and problems of a combined hydro- and steam-electric system (D). 555
- DAVIS, E. A.**
Effect of the speed of stretching and the rate of loading on yielding of mild steel (D). A-89
Yield point of low-carbon steel (D). 585
- DAVIS, E. M.**
Further experiments in the planing of hardwoods. 139
- DAVIS, R. H.**
Turbine-electric steamship *J. W. Van Dyke* (D). 216
- DAWLEY, C. A.**
Effect of pulsations on orifice meters (D). 312
- DAWSON, CARLTON W.**
Problems in modern deep-well pumping (D). 272
- DEEP-WELL PUMPING (D)**. 272
- DE FOREST, A. V.**
Yield point of low-carbon steel (D). 585
Yielding of mild steel (D). A-89
- DEFORMATION.** *See also Metal Rolling.*
Bearing pressures through a slightly waved surface or through a nearly flat part of a cylinder, and related problems of cracks. A-49
- DEGLER, H. E.**
Five years' progress of oil and gas power. 589
- DEJUHASZ, K. J.**
Piezoelectric gage (D). 203
Theory of elastic engine supports (D). 461
Vectoscope (D). 410
- DEN HARTOG, J. P.**
Rechnerische Verfahren zur Harmonischen Analyse und Synthese (BR). A-45
- DENNISON, E. S.**
Five years' progress of oil and gas power (D). 595
Friction of reciprocating engines (D). 42
- DEPRECIATION**
Governmental regulations on. 147, (D) 464
- DESIGN DATA**
Vibration problems. A-86, A-127
- DESUPERHEATERS**. 278
- DIAPHRAGMS.** *See Pressure-Responsive Elements.*
- DICKINSON, H. C.**
Influence of pressure on film viscosity (D). 160
- DIESEL-ELECTRIC LOCOMOTIVES.** *See Locomotives.*
- DIESEL ENGINES.** *See Engines.*
- DIFFERENTIAL ANALYZER**
Mathematical-machine determination of the vibration of accelerated unbalanced rotor. A-145
- "DISC-FLO" RAILWAY BEARING (D)**. 270
- DITMORE, G. W.**
Oil-bath-lubricated railway bearing (D). 270
- DOYLE, W. L. H.**
Diesel-electric switching locomotives (D). 38
- DRABELLE, J. M.**
Boiler furnaces (D). 569
- DREWRY, M. K.**
Cracks in boiler drums (D). 516
Design of high-capacity boilers (D). 163
- DRIVERS**
Centrifugal-machine. 415
- DRUCKER, D. C.**
Fundamentals of three-dimensional photoelasticity (D). A-135
- DRYDEN, HUGH L.**
Fluid mechanics for hydraulic engineers (BR). A-93
Introduction to fluid mechanics (BR). A-45
Modern developments in fluid dynamics (BR). A-191
- DRYSDALE, W. D.**
Combustion of pulverized coal (D). 60
- DUDLEY, WINSTON M.**
Improved method for calculating free vibrations in systems of several degrees of freedom (D). A-33
- DUTCHER, F. H.**
Diesel-electric switching locomotives (D). 38
Friction of reciprocating engines (D). 42
- DYNAMIC BALANCE.** *See Locomotives, Vibration.*
- E**
- ECKHARDT, CARL J., JR.**
Lignite—a grate-fired fuel of the future in the Southwest. 657
- ECONOMICS**
Income versus production (D). 46
Obsolescence in woodworking machinery. 145, (D) 464
- EDGERTON, C. T.**
Stresses in helical compression springs—present status of the problem. 643
- EKSERGIAN, R.**
Balancing reciprocating weights in steam locomotives (D). 530
Motive-power characteristics and light-weight equipment (railroads). 423
- ELASTIC ENGINE SUPPORTS**
Theory of. 31, (D) 460
- ELASTIC HYSTERESIS**
Bakelite under torsion. A-79
- ELASTICITY.** *See also Beams, Chain Links, Hysteresis, Metal Rolling, Photoelasticity, Plates, Rings, Shells, Stresses, Structures, Vibration, Wedges.*
Bearing pressures and cracks. A-49
Calculating energy losses during impact. A-67
Creep, elastic hysteresis, and damping in bakelite under torsion. A-79
Elastic stability of structures (BR). A-47
Elastic theory of wood failure. 259
Plasticity, and structure of matter (BR). A-43
- ELECTRIC GENERATORS**
Stress concentration in transverse grooves of two-pole rotors. A-151
- ELECTRIC UTILITY SYSTEMS.** *See Power Systems.*
- ELECTRICAL EQUIPMENT**
Improved, for power plants. 289
- ELECTRON DIFFRACTION**
Method of studying surface phenomena. 341
- ELLENWOOD, F. O.**
High-temperature-steam experience (D). 399
- ENGINE BALANCING.** *See Vibration.*
- ENGINE FOUNDATIONS**
Vibration in. 33, (D) 460
- ENGINE SUPPORTS**
Elastic, theory of. 31, (D) 460
- ENGINES**
Indentation method of measuring wear in (D). 344
Measuring pulsating gas flow to (D). 306
- ENGINES, DIESEL**
Comparison of, with steam power for ships (D). 216
Cooling towers and systems for. 27, (D) 452
Five years' progress of oil and gas power. 589
- ENGINES, DIESEL, AIRCRAFT**
Five years' progress of oil and gas power (D). 593
- ENGINES, GAS**
Cooling towers and systems for. 27, (D) 452
Five years' progress of oil and gas power. 589
- ENGINES, INTERNAL-COMBUSTION**
Lubrication of (BR). A-95
Piezoelectric gages for pressures in. 204
- ENGINES, RECIPROCATING**
Friction in (D). 42
Piston-ring-pocket pressures (D). 44
- ENNIS, W. D.**
Income versus production (D). 47
- EVANS, THOMAS H.**
Tables of moments and deflections for a rectangular plate fixed on all edges and carrying a uniformly distributed load. A-7
- EVAPORATORS.** 288
- EVERETT, F. L.**
Investigation of stress conditions in a full-size welded branch connection (D). 167
- EXLINE, PAUL G.**
Pressure-responsive elements (D). 354
Pressure-type thermometer systems (D). 357
- EXPANSION**
And forces in piping systems. A-21, (D) A-185
- EXPLOSIONS**
Measurement of gun pressures. 204
Pulverized-coal furnace (D). 65
- F**
- FANS**
Theory and performance of axial-flow fans (BR). A-45
- FANTZ, F. C.**
Stresses in a welded pipe connection (D). 168
- FATIGUE OF METALS**
Book review. A-93
Changes in a high-pressure drum to eliminate recurrence of cracks due to corrosion fatigue. 507
Notch effect with initial tension. A-26
Railroad axles (D). 66

FEEDWATER TREATMENT. <i>See also Boiler Corrosion.</i>	
Carbonaceous zeolites (D).....	159
Industrial power.....	286
Necessity for (D).....	64
Removal of oxygen.....	288
FERNALD, E. M.	
Reheat factors for expansions of superheated and wet steam (D).....	A-140
FESHBACH, H.	
Method of calculating energy losses during impact.....	A-67
FILMS	
Preparing stepped color films.....	325
FILTER PRESSES	
Burning pulp-mill waste from sulphite mill.....	679
FINNIECOME, J. R.	
Calculation of steam-turbine reheat factors (D).....	A-136
Effect of wire curvature on allowable stresses in helical springs (D).....	A-188
Reheat factors for expansions of superheated and wet steam (D).....	A-141
FINS	
Heat dissipation through (D).....	A-36
FISCHER, E. G.	
Boundary friction in bearings at low loads.....	A-109
FLANDERS, RALPH E.	
Income versus production (D).....	47
FLANGE JOINTS	
Bolt-relaxation test (D).....	A-31
Design of (D).....	71
High-temperature-steam experience.....	383
Tests of heat-exchanger flanges (D).....	77
FLINN, A. C.	
Boiler furnaces (D).....	569
FLOW NOZZLES. <i>See Fluid Meters.</i>	
FLOW OF FLUIDS. <i>See also Fluid Meters.</i>	
Analogy between fluid friction and heat transfer.....	705
Dynamic equation for flow in a pipe.....	A-11, (D) A-135
Fluid mechanics (BR).....	A-45
Theory and performance of axial-flow fans (BR).....	A-45
FLOW OF GASES	
Effect of pulsations on orifice meters.....	309
Errors in measuring, caused by pulsating flow.....	303
Measurement of pulsating flow.....	301
Tests on, with pitot tubes (D).....	497
FLOW OF LIQUIDS	
Angularity indicator.....	481, 504
Coefficients for water flow through A.S.M.E. long-radius nozzles.....	233
Design of circulating-water channels in condensers.....	125
Effect of pulsations.....	486
Friction coefficients for flow of water in 1-in. pipe.....	A-11, (D) A-135
Investigation of errors of pitot tubes.....	477
Pipe factors (D).....	495
Pitot tubes in large pipes.....	465
FLOW OF METALS. <i>See Metal Rolling.</i>	
FLOW OF STEAM	
Friction coefficients for, 1-in. pipe.....	A-11, (D) A-135
In surface condensers.....	133
FLOWERS, A. E.	
Centrifugal-machine applications (D).....	421
FLUID MECHANICS	
Introduction to (BR).....	A-45
Modern developments in fluid dynamics (BR).....	A-191
FLUID METERS. <i>See also headings under Flow, Pitot Tubes.</i>	
Coefficients for free and submerged discharge of water from A.S.M.E. long-radius nozzles.....	233
Coefficients of flow nozzles (D).....	40
Effect of high-temperatures and pressures on cast-steel venturi tubes.....	247
Effect of pulsations on orifice meters.....	309
Overall pressure loss in nozzles and orifices (D).....	41
Pulsating air velocity measurement.....	301
Rotary oil meters (D).....	347
FLY ASH	
Uses for (D).....	60
FOCKE, HEINRICH	
Development of the Focke helicopter.....	177
FOLSOM, R. G.	
Nozzle coefficients for free and submerged discharge.....	233
FOUNDATIONS. <i>See Engine Foundations.</i>	
FOX, E. G.	
By-product fuels in the steel industry....	665
FRANK, D. S.	
Combination oil-and-gas burners (D).....	267
FREQUENCY REGULATION	
Of electric-utility systems.....	94
FRICITION. <i>See also Metal Rolling.</i>	
Analogy between fluid friction and heat transfer.....	705
Boundary friction in bearings at low loads.....	A-109
Coefficients of, for flow of steam and water in 1-in. pipe.....	A-11, (D) A-135
Coefficients of static friction between clean and lubricated metal surfaces.....	633
Design data on vibration.....	A-128
Determination of coefficient of static and running friction.....	329
In reciprocating engines (D).....	42
Oiliness and the coefficient of static friction.....	330
Thick-film lubrication of full journal bearings of finite width.....	A-117
Wear in sliding and rolling.....	335
FROCHT, M. M.	
Three-dimensional photoelasticity (D).....	A-133
FRY, L. H.	
Balancing reciprocating weights in steam locomotives (D).....	532
Motive-power characteristics and light-weight equipment (railroads) (D).....	433
FUEL. <i>See also Coal, Fuel Pitch, Gas Fuel, Lignite, Oil Fuel, Pulverized Coal.</i>	
Bagasse-fuel tests.....	685
Burning pulp-mill waste from sulphite mill.....	679
Burning various types of oil-refinery fuels.....	699
Unusual and by-product fuels.....	285
FUEL OIL. <i>See Oil Fuel.</i>	
FUEL PITCH	
Use of, as pulverized fuel.....	577
FUEL-PITCH PULVERIZERS.	577
FURNACES. <i>See Boiler Furnaces, Combustion, Lime-Kiln Furnaces.</i>	
G	
GAGES	
For gun pressures.....	197
GARBAGE	
Combustion of (D).....	60
GARDNER, T.	
Burning various types of oil-refinery fuels (D).....	703
GARRELTS, J. M.	
Theory of statically indeterminate structures (BR).....	A-40
GAS BURNERS	
Characteristics of atmospheric-type burners when used with natural gas.....	673
Magnesite for protection of (D).....	56
GAS ENGINES. <i>See Engines.</i>	
GAS FUEL	
Analysis and combustion characteristics of natural-gas fuel.....	731
Burning blast-furnace gas over stoker By-product fuels in the steel industry.....	285 665
Flame velocities in moving gas mixtures.....	675
Gas-fuel mixtures in the steel industry.....	668
GAST, G. F.	
Burning various types of oil-refinery fuels (D).....	703
GEARS, ROLLCURVE	
Design and construction of.....	223
GERHARDT, E. H.	
Tests of heat-exchanger flanges (D).....	77
GENIESSE, J. C.	
Wear in lubrication problems (D).....	345
GERMAN, A. J.	
Condenser-tube life as affected by design and mechanical features of operation.....	125
GIESTL-GIESLINGEN, A.	
Drafting of steam locomotives (D).....	454
GILBERT, W. W.	
Effect of size and shape of cut upon the performance of cutting fluids when turning S.A.E. 3140 steel.....	315
GLENDENNING, E. B.	
Atomization of oil by small pressure atomizing nozzles.....	373
GOFF, JOHN A.	
Technische Thermodynamik (BR).....	A-96
GOLBER, H. E.	
Rollecurve gears.....	223
GOLDSMITH, LESTER M.	
High-pressure high-temperature turbine-electric steamship <i>J. W. Van Dyke</i>	205
GOOD, C. W.	
Friction of reciprocating engines (D).....	42
GRIMM, C. I.	
Kaplan turbines at Bonneville (D).....	558
GUNS	
Interpretation of a failure of.....	191
Piezoelectric gage for recording pressure in.....	197
H	
HAESSLER, WILLIAM	
Effect of wire curvature on allowable stresses in helical springs (D).....	A-190
HAGLER, EDMUND D.	
Application of temperature controllers (D).....	363
HALL, R. E.	
Attack on steel in high-capacity boilers as a result of overheating due to steam blanketing.....	597
HALMOS, E. E.	
Air chambers for discharge pipes (D).....	445
HARKINS, H. D.	
Boiler furnaces (D).....	569
HARLOW, J. H.	
Condenser performance with reduced cooling surface.....	133
Operating methods and problems of a combined hydro- and steam-electric system (D).....	557
HARMONIC ANALYSIS	
Book review.....	A-45
The Vectorscope.....	403
HARRINGTON, H. L.	
Operating methods and problems of a combined hydro- and steam-electric system.....	89, (D) 555
HAUSHALTER, F. L.	
Mechanical characteristics of rubber.....	149, (D) 463
HAYES, J. A.	
Burning various types of oil-refinery fuels (D).....	703
HAZARD, CHARLES S.	
Rotary oil meters (D).....	347
HEAT	
And thermodynamics (BR).....	A-42
HEAT BALANCE	
S.S. <i>J. W. Van Dyke</i>	208
HEAT EXCHANGERS	
Flange-joint tests (D).....	77
For cooling-tower use.....	28
HEAT TRANSFER	
Analogy between fluid friction and heat transfer.....	705
Black-body equivalent temperature of heat-receiving surfaces.....	564
Dissipation through fins (D).....	A-36
Steps in, from engine cylinders to atmosphere.....	28
Variation of coefficient of, with velocity in heat exchangers.....	27
HEAT-TREATMENT. <i>See also Surface Hardening.</i>	
Effect of, on springs.....	A-107
Effect of, on wear of steel.....	340
Stress-relief anneal.....	549
HEBLEY, H. F.	
Preparation of Illinois coal (D).....	459
HECHT, MAX	
Mechanical purification of steam within the boiler drum (D).....	718
HELICOPTERS	
Development of the Focke helicopter.....	177
HESLOP, PAUL L.	
Kaplan turbines at Bonneville.....	97, (D) 558
HETENYI, M.	
Fundamentals of three-dimensional photoelasticity (D).....	A-133
Some applications of photoelasticity in turbine-generator design.....	A-151
HILL, F. M.	
Determination of the expansion forces in piping by model test (D).....	A-185
HITCHCOCK, E. A.	
Boiler furnaces (D).....	569
Errors of pitot tubes.....	497
Pitot tubes in large pipes (D).....	473
HITCHENS, R. M.	
Behavior of sodium sulphite in high-pressure steam boilers (D).....	269
Sodium sulphite in boiler water (D).....	53
HODGE, A. H.	
Use of the piezoelectric gage in the measurement of powder pressures.....	197
HOLLISTER, S. C.	
Cracks in boiler drums (D).....	516
Heat-exchanger flanges (D).....	77
HOOPER, L. J.	
Kaplan turbines at Bonneville (D).....	498

- HORGER, O. J.
Balancing reciprocating weights in steam locomotives (D)..... 530
Locomotive axle testing (D)..... 66
Strength of materials (BR)..... A-95
Vibration of locomotive driving wheels caused by unbalance..... A-177
- HOVGAARD, WILLIAM
Determination of the expansion forces in piping by model test (D)..... A-186
- HOWARD PROCESS
Treating waste sulphite liquors..... 679
- HOWE, E. D.
Characteristics of atmospheric-type burners when used with natural gas..... 673
- HOYT, S. L.
Principles of powder metallurgy (BR)..... A-41
- HUBBARD, C. W.
Investigation of errors of pitot tubes..... 477
- HUCKERT, J. W.
Rollecurve gears (D)..... 229
- HUNTER, B. F.
Wear in lubrication problems (D)..... 343
- HYDRAULIC LOG
Hydroelectric station..... 93
- HYDRAULIC TURBINES
Kaplan turbines at Bonneville; design, construction, model tests, and setting..... 97, (D) 558
- HYDRAULICS. *See also* Cavitation, Pitot Tubes, Water Hammer.
Air chambers for discharge pipes (D).... 445
Fluid mechanics for hydraulic engineers (BR)..... A-93
Kaplan turbines at Bonneville..... 97, (D) 558
Operation of emergency shutoff valves in pipe lines (D)..... 75
Theory of resonance in pressure conduits..... 109
- HYDROGEN-ION CONCENTRATION. *See* Boiler Corrosion, Feedwater Treatment.
- HYDROSTATIC TESTS
On pipe and welded connections (D)..... 172
- HYSTERESIS
In bakelite under torsion..... A-79
Of rubber..... 156, (D) 463

I

- ILLMER, LOUIS
Friction of reciprocating engines (D)..... 44
- IMPACT
Calculating energy losses during..... A-67
- INCOME
Versus production (D)..... 46
- INDEX, Mechanical Engineering..... RI-53
- INDEX, SOCIETY RECORDS..... RI-43
- INDUSTRIAL POWER. *See* Power Plants.

J

- JACKSON, J. R.
Drafting of steam locomotives (D)..... 453
- JACOBUS, D. S.
Cracks in boiler drums (D)..... 518
Stresses in a welded pipe connection (D)..... 169
- JAEGER, CHARLES
Theory of resonance in pressure conduits..... 109
- JAMES, J. R.
Combustion of pulverized coal (D)..... 59
- JASPER, T. MCLEAN
Tests of heat-exchanger flanges (D)..... 77
- JEFFORDS, T. W.
Combustion of pulverized coal (D)..... 60
- JENKA, G. F.
Interpretation of a failure of an ordnance structure..... 191
- JESSOP, GEORGE A.
Kaplan turbines at Bonneville..... 97, (D) 558
- JOHNSON, H. G.
Characteristics of atmospheric-type burners when used with natural gas..... 673
- JOHNSTONE, H. F.
Decomposition of sodium-sulphite solutions at elevated temperatures (D)..... 53
Sodium sulphite in high-pressure steam boilers (D)..... 269
- JONES, L. B.
Balancing reciprocating weights in steam locomotives (D)..... 534

K

- KALINSKE, A. A.
Air chambers for discharge pipes (D)..... 448
Errors of pitot tubes (D)..... 498
- KANTER, J. J.
Creep strength of steels (D)..... 49
Yield point of low-carbon steel (D)..... 586
- KAPLAN TURBINES. *See* Hydraulic Turbines.
- KARASSIK, I. J.
Cavitation characteristics of centrifugal pumps described by similarity considerations..... 17
- KARELITZ, G. B.
Determination of the expansion forces in piping by model test (D)..... A-186
Friction of reciprocating engines (D)..... 43
Influence of pressure on film viscosity (D)..... 161
Lubrication of light internal-combustion engines (BR)..... A-95
Thin oil films (D)..... 332
Wear in lubrication problems (D)..... 343
- KATES, E. J.
Cooling-tower fundamentals (D)..... 452
Five years progress of oil and gas power (D)..... 593
Theory of elastic engine supports (D)..... 460
- KEEAN, JOSEPH H.
Friction coefficients for the compressible flow of steam..... A-11, (D) A-135
Heat and thermodynamics (BR)..... A-42
- KEETH, GROVER
Burning pulp-mill waste from sulphite mill..... 679
- KENT, R. H.
Use of the piezoelectric gage in the measurement of powder pressures..... 197
- KERR, E. W.
Bagasse furnaces..... 685
- KERR, H. J.
Design of high-capacity boilers (D)..... 163
High-temperature-steam experience (D)..... 399
- KESSLER, LEWIS H.
Speed of water-hammer pressure wave in transite pipe..... 11, (D) 451
- KIEFER, P. W.
Locomotive axle testing (D)..... 66
- KIESEL, W. F., JR.
Drafting of steam locomotives (D)..... 456
- KIMBALL, A. L.
Sound (BR)..... A-48
Theory and performance of axial-flow fans (BR)..... A-45
- KIMBALL, E. E.
Motive-power characteristics and light-weight equipment (railroads) (D)..... 434
- KIMBALL, JAMES L.
Application of temperature controllers (D)..... 363
- KNAPP, F.
Operation of emergency shutoff valves in pipe lines (D)..... 75
Resurge phase of water hammer (D)..... 440
- KRAFT-PAPER INDUSTRY
Recovery of black liquor..... 285
- KREISINGER, HENRY
Combustion of pulverized coal (D)..... 55
Lignite—a grate-fired fuel of the future in the Southwest (D)..... 662
- KRONENBERG, M.
Cutting fluids for S.A.E. 3140 steel (D)..... 320
- KROON, R. P.
Steady oscillations of systems (D)..... A-92
- KYROPoulos, S.
Wear in lubrication problems (D)..... 343
- LABOR
Working hours in the textile industry..... 258
- LANSFORD, W. M.
Pitot tubes in large pipes (D)..... 474
- LARSEN, G. S.
Stresses in a welded pipe connection (D)..... 169
- LAUX, J. P.
Diesel-electric switching locomotives (D)..... 37
- LEADERMAN, HERBERT
Creep, elastic hysteresis, and damping in bakelite under torsion..... A-79
- LECONTE, JOSEPH N.
Experiments and calculations on the resurge phase of water hammer (D).... 440
- LEE, GEORGE H.
Pressure-responsive elements (D)..... 553
- LEITER, R. W. E.
Some observations on the yield point of low-carbon steel..... 581
Yielding of mild steel (D)..... A-90
- LESSELLS, JOHN M.
La Fatigue des Métaux (BR)..... A-93
- LEWIS, FRANK M.
Einführung in die Technische Schwingungslehre (BR)..... A-93
The Vectorscope (D)..... 411
- LIGNITE
A grate-fired fuel of the future in the Southwest..... 657
Combustion of..... 283
- LIME-KILN FURNACES
Combustion problems (D)..... 61
- LINN, F. C.
Influence of pressure on film viscosity (D)..... 160
- LINSENMEYER, F. J.
Combustion of pulverized coal (D)..... 62
- LIPETZ, A. I.
Drafting of steam locomotives (D)..... 454
To the question of balancing reciprocating weights in steam locomotives..... 521
Traction nouvelle (BR)..... A-46
- LOAD DISPATCHING CURVES
For power stations..... 91
- LOADING DIAGRAMS
For power stations..... 92
- LOCOMOTIVE AXLES. *See* Railroad Axles.
- LOCOMOTIVES
Axle testing (D)..... 66
Motive-power characteristics of various types of..... 423
- LOCOMOTIVES, DIESEL-ELECTRIC SWITCHING
Availability factor (D)..... 38
Savings in operating costs (D)..... 37
Supercharging of (D)..... 38
- LOCOMOTIVES, STEAM
Balancing reciprocating weights of..... 521
Draft nozzles (D)..... 453
Vibration of driving wheels caused by unbalance..... A-177
- LOOMS. *See* Textile Machinery.
- LUBRICATION. *See also* Bearings, Friction.
Cooling of turbine bearings (D)..... 162
Beilby layer..... 329, (D) 331, 333
Effect of different oil-film thicknesses on the resistance to mechanical wear..... 328
Effect on wear, of additions to mineral oil..... 339
Of light internal-combustion engines (BR)..... A-95
Studies in boundary lubrication..... 633
Thick-film lubrication of full journal bearings of finite width..... A-117
Thin oil films..... 323
Wear in lubrication problems..... 335
- LUHRS, J. F.
Automatic control in the oil industry (D)..... 352
- M
- MACGREGOR, C. W.
Two-load method of determining average true stress-strain curve in tension..... A-156

MACHINE DESIGN
Design and construction of rollecurve gears..... 223

MACHINE TOOLS
Index of orders received..... 146

MACHINERY. *See* Machine Tools, Textile Machinery, Woodworking Machinery.

MACHINING METALS. *See* Metal Cutting.

MACKEY, B. H.
Piezoelectric gage (D)..... 204

MAGNESITE
Use of, for protecting burners (D)..... 56

MAGNETISM
Problems of the magnetizing curve (BR)..... A-46

MALLOZZI, PHILIP
The Vectorscope (D)..... 411

MANAGEMENT
Obsolescence of equipment..... 145, (D) 464
Organization—design for modern business..... 291

MARCHANT, J. H.
Determination of the expansion forces in piping by model test (D)..... A-186

MARKEY, E. H.
Turbine-electric steamship *J. W. Van Dyke* (D)..... 217

MARTIN, R. B.
Chlorination of condenser cooling water (D)..... 651

- MASON, C. E.
 Application of automatic control to continuous processes (D)..... 358
 Quantitative analysis of process lags (D)..... 67
- MASON, M. A.
 Air chambers for discharge pipes (D)..... 445
- MATERIALS
 Elasticity, plasticity, and structure of matter (BR)..... A-43
 Resistance of, to wear, tests..... 335
- MATHEMATICAL MACHINES
 Differential analyzer..... A-145
 Vectroscope..... 403
- MATHEMATICS
 Elementary matrices (BR)..... A-192
 Geometry of determinantal loci (BR)..... A-191
 Harmonic analysis (BR)..... A-45
 Men of (BR)..... A-37
- MATTIMORE, J. D.
 Design of flanged joints for valve bonnets (D)..... 71
 Correction..... 75
 Heat-exchanger flanges (D)..... 77
- MAUGH, L. C.
 Statically indeterminate stresses (BR)..... A-43
 Theory of modern steel structures (BR)..... A-41
- MAURER, M. S.
 Chlorination of condenser cooling water (D)..... 654
- McCABE, L. C.
 Effect of preparation on ash fusibility as revealed by study of selected Illinois coals..... 693
 Some problems related to the preparation of Illinois coals (D)..... 1, (D) 459
- MCCOLLAM, C. H.
 High-temperature-steam experience (D)..... 400
- MCCUTCHAN, ARTHUR
 Flanged joints for valve bonnets (D)..... 74
 High-temperature steam experience at Detroit..... 383
 Investigation of stress conditions in a full-size welded branch connection (D)..... 167
 Tests of heat-exchanger flanges (D)..... 78
- MCKEE, S. A.
 Wear in lubrication problems (D)..... 344
- MCKINNEY, D. S.
 Mechanical purification of steam within the boiler drum (D)..... 718
- MCCLAIN, R. H.
 Industrial power (D)..... 289
- MCMAHON, J. B.
 Application of temperature controllers (D)..... 363
 Automatic control in the oil industry (D)..... 351
- MEASURING INSTRUMENTS. *See also* Testing Equipment
 Average-velocity meter, flow of gases..... 305
 Callendar meter, flow of gases..... 302
 Effect of pulsations on gas orifice meters..... 309
 Hot-wire anemometer..... 301
 Indentation method of measuring wear (D)..... 344
 Nozzles and orifices..... 302
 Piezoelectric gage for gun pressures..... 197
 Pitot tubes..... 302
 Thomas meter, flow of gases..... 302
- Mechanical Engineering Index..... RI-53
- MERRIAM, K. G.
 Errors of pitot tubes (D)..... 499
- METAL. *See also* Metallurgy, Powder Metallurgy.
 Bainby layer..... 329, (D) 331, 333, 341
- METAL CUTTING
 Effect of size and shape of cut upon the performance of cutting fluids when turning S.A.E. 3140 steel..... 315
- METAL FATIGUE. *See* Fatigue of Metals.
- METAL ROLLING
 Forces required for rolling steel strip under tension..... A-54
- METALLURGY. *See also* Powder Metallurgy.
 Attack on boiler tubes due to steam blanketing..... 597
 Cracks in boiler drum due to corrosion fatigue..... 512
 Effects of high-temperature steam on piping and turbine parts..... 388
 Interpretation of a gun rupture..... 191
 Observations on yield point of low-carbon steel..... 581
 Problems of the magnetizing curve (BR)..... A-46
- METCALF, P. B.
 Boiler furnaces (D)..... 570
- METERS. *See* Fluid Meters, Measuring Instruments, Pitot Tubes, Testing Equipment.
- MILLER, J. G.
 Methods employed to remedy water-hammer shock in pumping systems (D)..... 450
- MILLER, RALPH
 Diesel-electric switching locomotives (D)..... 38
- MINDLIN, R. D.
 Fundamentals of three-dimensional photoelasticity (D)..... A-135
- MITEREFF, S. D.
 Application of temperature controllers (D)..... 365
- MODELS
 Airship structure (D)..... A-33
 Expansion forces of pipe bends, A-21, (D) A-185
 Of Kaplan turbines for Bonneville, tests..... 99, (D) 558
 Ship, tests on..... 206
- MOODY, LEWIS F.
 Errors of pitot tubes (D)..... 500
- MORGAN, F.
 Thick-film lubrication of full journal bearings of finite width..... A-117
- MUIR, J. F.
 Boiler furnaces (D)..... 571
- MURRAY, WILLIAM MACGREGOR
 Heat dissipation through annular disk or fin of uniform thickness (D)..... A-36
- MUSKAT, M.
 Thick-film lubrication of full journal bearings of finite width..... A-117
- N
- NÁDAL, A.
 Elasticity, plasticity, and structure of matter (BR)..... A-43
 Erdbaumechanik und Baupraxis, Eine Klarstellung (BR)..... A-44
 Forces required for rolling steel strip under tension..... A-54
 Knickung, Kippung, Beulung (BR)..... A-47
 Men of mathematics (BR)..... A-37
 Theorie der Setzung von Tonschichten (BR)..... A-44
- NANCE, G. RUSSELL
 Fundamental relationships in the design of cooling towers..... 721
- NATURAL GAS
 Combustion of..... 673
- NEEDS, S. J.
 Influence of pressure on film viscosity in heavily loaded bearings (D)..... 160
- NEELY, G. L.
 Influence of pressure on film viscosity (D)..... 161
- NELIS, J. J.
 Turbine-electric steamship *J. W. Van Dyke* (D)..... 217
- NELSON, C. W.
 Vibration of locomotive driving wheels caused by unbalance..... A-177
- NEOPRENE
 Compression tests of..... 153
- NEUBAUER, E. T. P.
 Effect of wire curvature on allowable stresses in helical springs (D)..... A-190
 Transverse deflection of helical springs (D)..... 630
- NEWKIRK, B. L.
 Wear in lubrication problems (D)..... 344
- NEWMARK, N. M.
 Die Knickfestigkeit von Stäben und Stabwerken (BR)..... A-47
- NICHOLLS, P.
 Boiler slag, prevention and removal (D)..... 39
- NORRIS, CHARLES B.
 Elastic theory of wood failure..... 259
- NORTHUP, M. S.
 Creep in tubular pressure vessels (D)..... 245
- NORTON, F. H.
 Creep in tubular pressure vessels..... 239
 Relaxation of materials at high temperature (D)..... 552
- NORTON, PAUL T., JR.
 Obsolescence in woodworking machinery..... 145, (D) 464
- NOYES, M. S.
 Determination of the expansion forces in piping by model test (D)..... A-187
 Turbine-electric steamship *J. W. Van Dyke* (D)..... 218
- NOZZLES. *See* Fluid Meters.
- O
- OBsolescence
 Air-line equipment (D)..... 464
 Woodworking machinery..... 145, (D) 464
- OIL BURNERS
 Combination oil-and-gas burners (D)..... 267
 Factors influencing performance of, tests on..... 373
- OIL FILMS
 Production of specified thicknesses of..... 324
- OIL FUEL
 Combustion of (D)..... 56
 Cost comparison of, for ships (D)..... 216
 Effect of viscosity on oil-burner performance..... 373
- OIL INDUSTRY
 Application of automatic control in (D)..... 350
 Burning various types of oil-refinery fuels Power and steam plants for oil-refinery service..... 699
 733
- OIL TANKERS. *See* Ships (*J. W. Van Dyke*).
- OLIVER, H. G.
 Tests of heat-exchanger flanges (D)..... 77
- ORDNANCE. *See* Army Ordnance.
- ORGANIZATION
 Design for modern business..... 291
- ORIFICES. *See* Fluid Meters.
- ORMONDROYD, J.
 Science and human experience (BR)..... A-39
 Vibration problems, design data, A-86, A-127
 Vibration problems in engineering (BR)..... A-94
- OSCILLATION. *See* Vibration.
- ORGOOD, W. R.
 Theory of flexure for beams with non-parallel extreme fibers..... A-122
- OVITZ, F. K.
 Combustion of pulverized coal (D)..... 56
- OXYGEN
 Use of, in pulverized-coal furnaces..... (D) 55, (D) 66
- P
- PAPER INDUSTRY
 Black liquor recovery units..... 285
 Burning pulp-mill waste from sulphite mill..... 679
- PARDOE, W. S.
 Effect of high temperatures and pressures on cast-steel venturi tubes..... 247
 Speed of water-hammer pressure wave in transite pipe (D)..... 451
- PARTRIDGE, E. P.
 Attack on steel in high-capacity boilers as a result of overheating due to steam blanketing..... 597
- PASINI, A. C.
 Combustion of pulverized coal (D)..... 61
- PEABODY, R. M.
 Typical analysis of water hammer in a pumping plant of the Colorado River Aqueduct..... 117
- PECKER, JOSEPH S.
 Problems and trends in centrifugal-machine applications..... 415
- PETERS, J. C.
 Quantitative analysis of process lags (D). Some fundamental considerations in the application of automatic control to continuous processes (D)..... 358
- PETRIE, E. C.
 Flanged joints for valve bonnets (D)..... 71
- PHILO, F. G.
 Boiler-plant performance with natural-gas firing..... 727
- PHOTOELASTICITY
 Calculation of stresses within photoelastic models..... A-71
 Fundamentals of three-dimensional photoelasticity (D)..... A-133
 Some applications of, in turbine-generator design..... A-151
- PHOTOGRAPHY
 Photographing combustion in boiler furnaces..... 569, (D) 569
- PHYSICS
 Alchemy, the newer (BR)..... A-38
 Electron diffraction..... 341
 Procedures in experimental physics (BR)..... A-192
 Recollections and reflections (BR)..... A-38
 Sound (BR)..... 197
- PICKETT, GERALD
 Solution of rectangular clamped plate with lateral load by generalized energy method..... A-168
- PIEZOELECTRIC GAGES
 For measuring engine pressures..... 204
 For measuring gun pressures..... 197

PIGOTT, R. J. S.	
Thin oil films (D).....	332
Wear in lubrication problems (D).....	344
PIPE. <i>See also</i> Piping, Transite Pipe.	
Hydraulic, effects of bursting (D).....	76
Steel, tests to destruction.....	172
Welded branch connections, tests (D).....	167
PIPE FITTINGS	
For welding (D).....	167
PIPES, LOUIS A.	
Elementary matrices (BR).....	A-192
PIPING	
High-pressure steam, on S.S. <i>J. W. Van Dyke</i>	208
Metallurgical changes in, due to high-temperature steam.....	388
Model tests of expansion forces.....	A-21, (D) A-185
Theory of resonance in pressure conduits.....	109
Water hammer in pumping lines.....	117
PISTON RINGS	
Pocket pressures and friction (D).....	44
PITOT TUBES	
Investigation of errors in.....	477
In large pipes.....	465
PLASTICITY	
Elasticity, and structure of matter (BR).....	A-43
PLATES	
Clamped rectangular plates with central concentrated load.....	A-114
Collision of spheres with.....	A-70
Solution of rectangular clamped plate with lateral load by generalized energy method.....	A-168
Two-dimensional stresses in.....	A-63
Uniformly loaded, fixed on edges, moments and deflections for.....	A-7
POPE, JOSEPH	
Industrial power (D).....	289
PORITSKY, H.	
Numerical and graphical methods of solving two-dimensional stress problems.....	A-63
POWER METALLURGY	
Principles of (BR).....	A-41
POWELL, E. B.	
Boiler furnaces (D).....	572
POWER	
Output of Ford Motor Co.....	282
POWER PLANTS. <i>See also</i> Engines.	
Attainable heat rates with higher pressures and temperatures.....	274
Improved switching equipment.....	289
POWER PLANTS, HYDROELECTRIC	
Bonneville, costs of installation at (D).....	559
Bonneville, Kaplan turbines.....	97, (D)
Operation of, as units of a system, 89, (D).....	555
POWER PLANTS, INDUSTRIAL	
Superposed installations, steam cycles.....	274, (D)
POWER PLANTS, STEAM	
Connors Creek, stoker-fired boiler (D).....	61
Increment costs of steam generation (D).....	556
Operation of, as units of a system, 89, (D).....	555
Power and steam plants for oil-refinery service.....	283
"Steamotive"	
Trends in recent boiler installations.....	81
Turboelectric steamship.....	205
POWER SYSTEMS	
Operating methods and problems of a combined hydro- and steam-electric system.....	89, (D)
PRESSURE. <i>See also</i> Bearing Pressures, Metal Rolling.	
Effect of high temperatures and pressures on cast-steel venturi tubes.....	247
PRESSURE-RESPONSIVE ELEMENTS	
Discussion.....	(D) 354, (D)
Piezoelectric gage.....	204
Pressure-type thermometer systems (D).....	357
PRESSURE VESSELS	
Creep in tubular pressure vessels.....	239
PROBABILITY, LAW OF	
Application to angles of flow.....	480
PROCESS CONTROL. <i>See</i> Automatic Control.	
PROCESS LAGS. <i>See also</i> Automatic Control. Quantitative analysis of (D).....	67
PRODUCTION	
Income versus (D).....	46
PULVERIZED COAL	
Boiler performance with.....	281
Combustion of (D).....	55
Combustion of anthracite cilm.....	283
Effect of fineness on combustion.....	86
Energy distribution in the pulverized-coal furnace (D).....	263
Explosions in furnaces (D).....	65
Furnace temperatures, ash, and slag.....	561
Tests on pulverizers.....	369
PULVERIZERS. <i>See</i> Coal Pulverizers, Fuel-Pitch Pulverizers.	
PUMPING SYSTEMS	
Water-hammer control in.....	5, 11, 117, (D) 450, (D)
PUMPS. <i>See also</i> Centrifugal Pumps. Problems in deep-well pumping (D).....	272
PURCELL, T. E.	
Design of high-capacity boilers (D).....	166
PURSELL, J. W., Jr.	
Behavior of sodium sulphite in high-pressure steam boilers (D).....	269
Sodium-sulphite in boiler water (D).....	53
R	
RAIL CARS	
Diesel-electric (BR).....	A-46
RAILROAD AXLES	
Fatigue cracks in (D).....	67
Locomotive axle testing (D).....	66
RAILROAD BUFFERS	
Rubber disks for.....	153
Tests of old- and new-type buffers (D).....	537
RAILROADS	
Motive-power characteristics and light-weight equipment.....	423
Railway news (BR).....	A-46
RAILWAY BEARINGS	
"Disc-Flo" bearing (D).....	270
RATEL, MAURICE	
Boiler slag, prevention and removal (D).....	39
RATHBONE, T. C.	
Methods of rotor-unbalance determination (D).....	A-131
The Vectoroscope (D).....	412
RAUSCHER, MANFRED	
Steady oscillations of systems with nonlinear and unsymmetrical elasticity (D).....	A-91
RAUTENSTRAUCH, WALTER	
Income versus production (D).....	46
RAYMOND, FAIRFIELD E.	
Organization—design for modern business.....	291
RECIPROCATING ENGINES. <i>See</i> Engines.	
REES, O. W.	
Effect of preparation on ash fusibility as revealed by study of selected Illinois coals.....	693
REGULATORS. <i>See</i> Automatic Control and Controllers.	
REHEAT FACTORS. <i>See</i> Steam, Steam Turbines.	
REID, H. P.	
Boiler furnaces (D).....	572
RELAXATION. <i>See</i> Creep of Metals.	
RESONANCE. <i>See</i> Water Hammer, Vibration.	
RETTALIATA, J. T.	
Reheat factors for expansions of superheated and wet steam (D).....	A-141
REYNOLDS, JOSEPH B.	
Chain links under cross forces.....	A-171
REYNOLDS' NUMBER	
Mean, for flow in pipes.....	A-19
RHEINGANS, W. J.	
Errors of pitot tubes (D).....	500
RHYS, C. O.	
Creep in tubular pressure vessels (D).....	245
RINGS	
Theory of deflection of circular ring.....	A-175
ROBERTS, J. F.	
Kaplan turbines at Bonneville (D).....	559
ROBERTSON, B. J.	
Friction of reciprocating engines (D).....	45
ROBINSON, E. L.	
Calculation of steam-turbine reheat factors (D).....	A-138
Effect of temperature variation on the creep strength of steels (D).....	49
High-temperature-steam experience (D).....	400
Reheat factors for expansions of superheated and wet steam (D).....	A-142
Resistance to relaxation of materials at high temperature.....	543
ROLLCURVE GEARS	
Design and construction of.....	223
ROMER, J. B.	
Attack on steel in high-capacity boilers (D).....	621
Cracks in boiler drums (D).....	518
ROSENZWEIG, S.	
Theory of elastic engine supports, 31, (D).....	460
ROSSHEIM, D. B.	
Tests of heat-exchanger flanges (D).....	77
ROTOR-UNBALANCE. <i>See</i> Vibration.	
ROTORS	
Centrifugal stresses in.....	A-152
ROUSE, HUNTER	
Errors of pitot tubes (D).....	502
ROWAND, W. H.	
Mechanical purification of steam within the boiler drum (D).....	719
ROWLEY, L. N., Jr.	
Five years' progress of oil and gas power (D).....	594
RUBBER	
Mechanical characteristics of.....	35, 149, A-159, (D) 461, (D)
Bibliography.....	463
Static and dynamic constants of rubber compounds (D).....	158
RUBBER, SPONGE	
Compression tests on.....	151, (D)
RUBBER SPRINGS	
Compression, torsion, shear; characteristics of.....	149, (D)
Shear loading.....	A-159
RUDD, W. C.	
Combustion of pulverized coal (D).....	56
RUGG, H. M.	
Diesel-electric switching locomotives (D).....	37
RUIZ, A. L.	
Rollcurve gears (D).....	230
S	
SANDBLAST	
Effect of pressure on resistance to abrasion of iron and steel.....	337
SANDERS, W. C.	
Locomotive axle testing (D).....	66
SAWYER, R. TOM	
Diesel-electric switching locomotives (D).....	37
SCHOESSOW, G. J.	
Cracks in boiler drums (D).....	516
SCHROEDER, BERNHARD	
Boiler furnaces (D).....	572
SCHULTZ, W. F.	
Turbine-electric steamship <i>J. W. Van Dyke</i>	219
SCHWARTZ, M. C.	
Mechanical purification of steam within the boiler drum (D).....	719
SCHWEIZER, P. E.	
The Vectorscope (D).....	412
SCIENCE	
And human experience (BR).....	A-39
SCIENTISTS	
In action (BR).....	A-37
SCOTT, E. KILBURN	
Combustion of pulverized coal (D).....	55
SEABLOOM, E. R.	
Stresses in a welded pipe connection (D).....	170
SEMAR, HAROLD W.	
Determination of the expansion forces in piping by model test.....	A-21, (D) A-185
SEPARATORS. <i>See</i> Centrifugal Machines, Steam Quality.	
SEWAGE SLUDGE	
Combustion of (D).....	56
SEWARD, H. L.	
Turbine-electric steamship <i>J. W. Van Dyke</i> (D).....	219
SHells	
Analysis of spherical shells of variable wall thickness.....	A-97
SHEPPARD, W. L.	
Deflection of helical springs under transverse loadings.....	623
SHIPS	
High-pressure high-temperature turbine-electric steamship <i>J. W. Van Dyke</i> ..	205
Model tests.....	206
SHORTLEY, G. H.	
Calculation of stresses within the boundary of photoelastic models.....	A-71
SHOWERS, C.	
Combustion of pulverized coal (D).....	59
SIMARD, R. G.	
Wear in lubrication problems (D).....	345
SITTER, E. A.	
Combustion of pulverized coal (D).....	59
SKOGlund, V. J.	
Boiler furnaces (D).....	573
SLAG. <i>See</i> Boiler Slag.	
SMITH, C. S.	
Power and steam plants for oil-refinery service (D).....	738

SMITH, E. DILLON	
Obsolescence in woodworking machinery (D).....	464
SMITH, ED S., JR.	
Application of temperature controllers (D).....	366
Pressure-responsive elements (D).....	355
Quantitative analysis of process lags (D).....	68
Rotary oil meters (D).....	347
SMITH, J. F. DOWNE	
Mechanical characteristics of rubber (D).....	463
Rubber springs—shear loading.....	A-159
SMITH, R. B.	
Calculation of steam-turbine reheat factors (D).....	A-136
Errors of pitot tubes (D).....	503
Pulsating air velocity measurement (D).....	307
Research on flow nozzles (D).....	40
SMITH-PETERSEN, N. O.	
Design of flanged joints for valve bonnets (D).....	71
Correction.....	75
Heat-exchanger flanges (D).....	77
SMOKE ABATEMENT	
Effect of fineness of pulverized coal on.....	86
Use of oxygen for (D).....	55
Washed coal reduces fly ash and sulphur fumes.....	4, (D) 459
SNIVELY, H. D.	
Numerical and graphical method of solving two-dimensional stress problems.....	A-63
SODERBERG, C. RICHARD	
Scientist in action (BR).....	A-37
Turbine cylinder joints (D).....	A-31
SODIUM SULPHITE <i>See</i> Boiler Corrosion, Feedwater Treatment.	
SOIL MECHANICS (BR).....	A-44
SOLDATOFF, V. V.	
Boiler furnaces (D).....	573
SOLING, SAM P.	
Heat dissipation through fins (D).....	A-36
SOND (BR).....	A-48
SOUND CONDUCTIVITY Of various materials.....	35, (D) 460
SPARKS, C. H.	
Boiler furnaces (D).....	574
SPHERICAL SHELLS . <i>See</i> Shells.	
SPINDLES . <i>See</i> Textile Machinery.	
SPINK, L. K.	
Effect of high temperatures and pressures on cast-steel venturi tubes (D).....	248
SPITZGLASS, ALBERT F.	
Application of automatic control to continuous processes (D).....	361
Application of temperature controllers (D).....	364
Automatic control in the oil industry (D).....	350
SPONGE RUBBER . <i>See</i> Rubber.	
SPOTTS, M. F.	
Analysis of spherical shells of variable wall thickness.....	A-97
SPRAGUE, RUSSELL	
Income versus production (D).....	48
SPRENKLE, R. E.	
Effect of pulsations on orifice meters (D).....	313
SPRING CLUTCHES . <i>See</i> Clutches.	
SPRINGS . <i>See also</i> Rubber Springs.	
Book review.....	A-48
Deflection curves for cork, rubber, and steel springs.....	36, (D) 460
Deflection of helical springs under transverse loadings.....	623
Helical, allowable stresses in.....	A-25, (D) A-188
Linear and torsional spring constants.....	A-129
Spring clutch.....	A-103
Stresses in helical compression springs.....	643
Vibration of.....	31, (D) 460
STARBUCK, G. F.	
Balancing reciprocating weights in steam locomotives (D).....	535
STEAM . <i>See also</i> Flow of Steam, Fluid Meters, Superheated Steam.	
Calculation of steam-turbine reheat factors (D).....	A-136
Reheat factors for expansions of superheated and wet steam (D).....	A-140
STEAM BLANKETING . <i>See</i> Boilers.	
STEAM BOILERS . <i>See</i> Boilers.	
STEAM CONDENSERS	
Chlorination of condenser cooling water (D).....	651
Corrosion of tubes as affected by design and operation.....	125
Performance of, with reduced cooling surface, tests.....	133
Removing entrained air in water supply.....	212, (D) 217
Retubing of, tests.....	133
STEAM QUALITY	
Conductivity tests of samples taken with different types of steam-drum baffles.....	711
STEAM TURBINES . <i>See also</i> Power Plants.	
Calculation of reheat factors (D).....	A-136
High-temperature-steam experience.....	383
Industrial installations listed by types and capacities.....	274
Lubricating and cooling bearings (D).....	162
Metallurgical effects on, due to high-temperature steam.....	300
Mixed-pressure installations.....	277
Stresses in T-head blade fastenings.....	A-153
Types for industrial plants.....	273
STEARATE FILMS	
Thickness and color of multilayer.....	325
STEEL . <i>See also</i> Boiler Corrosion, Corrosion, Creep of Metals, Fatigue of Metals, Metal Rolling, Metallurgy, Springs.	
Creep strength of (D).....	49
Modulus of elasticity and coefficient of expansion of carbon steel.....	A-23, (D) A-185
Observations on yield point of low-carbon steel.....	581
Relaxation tests on.....	543
S.A.E. 3140, cutting speed and tool life.....	315
STEEL INDUSTRY	
By-product fuels in.....	665
Process-heat requirements in a steel plant in relation to by-product-gas supply.....	671
STEEN-JOHNSEN, H.	
Turbine-bearing tests (D).....	162
STEINBECK, C. E.	
Power and steam plants for oil-refinery service.....	733
STOKERS	
Lignite-burning steam-generators.....	659
Performance at Conners Creek plant (D).....	61
Ratel multiple-retort, comparative tests (D).....	39
STRAUB, F. G.	
Decomposition of sodium-sulphite solutions at elevated temperatures (D).....	53
STRENGTH OF MATERIALS	
Book review.....	A-95
Elastic theory of wood failure.....	259
Observations on the yield point of low-carbon steel.....	581
Work strengthening.....	584
STRESS CORROSION	
Attack on steel in high-capacity boilers as result of overheating due to steam blanketing.....	597
STRESSES . <i>See also</i> Beams, Bolts, Chain Links, Creep of Metals, Flange Joints, Metal Rolling, Photoelasticity, Plates, Rings, Shells, Springs, Structures, Welded Piping Joints.	
Bearing pressures through a slightly waved surface or through a nearly flat part of a cylinder, and related problems of cracks.....	A-49
Centrifugal-machine baskets.....	421
Centrifugal stresses in rotors.....	A-152
Elastic theory of wood failure.....	259
Numerical and graphical method of solving two-dimensional stress problems.....	A-63
Relaxation stress in bolts (D).....	73
Statically indeterminate (BR).....	A-43
Stress concentration in T-heads.....	A-153
Stress concentration in transverse grooves of two-pole generator rotors.....	A-151
STRONG, H. W.	
Combustion of pulverized coal (D).....	61
STROWGER, E. B.	
Operating methods and problems of a combined hydro- and steam-electric system.....	89, (D) 555
STRUCTURES	
Buckling, elastic stability of structures (BR).....	A-47
Statically indeterminate frameworks (BR).....	A-40
Statically indeterminate stresses (BR).....	A-43
Theory of modern steel structures (BR).....	A-41
Theory of statically indeterminate (BR).....	A-40
SULLIVAN, W. A.	
Atomization of oil by small pressure-atomizing nozzles.....	373
SUPERCHARGING	
Of Diesel-electric locomotives (D).....	38
SUPERHEATED STEAM	
Effect of, on equipment.....	383
Temperature control of (D).....	63
SURFACE HARDENING	
Hardness at various case-hardening depths of heat-treated steels.....	340
T	
T-HEADS	
Stress concentration in.....	A-153
TAFF, W. O.	
Decomposition of sodium-sulphite solutions at elevated temperatures (D).....	53
TANKERS . <i>See</i> Ships.	
TAYLER, T. C.	
Combustion of pulverized coal (D).....	61
TEMPERATURE	
Effect of high temperatures and pressures on cast-steel venturi tubes.....	247
Wet-bulb, New York City observations.....	26
TEMPERATURE CONTROL AND CONTROLLERS . <i>See</i> Automatic Control.	
TEMPERATURE INDICATORS AND RECODERS	
Pressure-type thermometer systems (D).....	357
TEMPERATURE MEASUREMENT	
Methods of measuring furnace temperatures.....	568, (D) 572
TENNEN, E. H.	
Boiler furnaces (D).....	574
Design of high-capacity boilers (D).....	166
TESTING EQUIPMENT	
Bearing-testing machine.....	A-110, A-121
Chain links, transverse loading.....	A-173
Coefficient of friction with thin oil films.....	329
Coefficient of static friction.....	633
Creep in tubular pressure vessels.....	240
Deposition of thin oil films from oil fog.....	326
Dynamic balance.....	A-1, (D) A-131
Expansion forces in model pipe bends.....	A-21, (D) A-185
Flow of gases, effect of pulsations on.....	309
Flow of water through nozzles.....	233
Friction of steam and water flow in pipes	A-11
Heliocopter rotor.....	186
Oil-spray characteristics.....	373
Pitot tubes.....	477
Pressure effect on venturi tubes.....	248
Pressure vessels (tubes).....	517
Relaxation-test.....	(D) 72, 545, 551
Springs.....	626
Stereophotographic measurements on flapping of blades of aircraft lifting rotors.....	183
Wear-testing machines.....	335
TESTING MATERIALS	
Effect of speed of stretching and rate of loading on yielding of mild steel (D).....	A-89
Resistance to relaxation at high temperature.....	543
Some observations on yield point of low-carbon steel.....	581
Two-load method of determining average true stress-strain curve in tension.....	A-156
TEXTILE MACHINERY	
Distribution of woolen and worsted machinery.....	251
TEXTILES	
Materials used by woolen-and-worsted industry.....	255
Twenty years of machine activity in the woolen-and-worsted industry.....	251
THATCHER, C. G.	
Calculation of steam-turbine reheat factors (D).....	A-139
Reheat factors for expansions of superheated and wet steam (D).....	A-140
THERMODYNAMICS	
Book review.....	A-96
And heat (BR).....	A-42
TERMOMETERS . <i>See</i> Temperature Indicators and Recorders, Pressure-Responsive Elements.	
THOMA PARAMETER	
For cavitation in hydraulic machines.....	17
THORSON, A. W.	
Combustion of pulverized coal (D).....	62
THRALL, R. M.	
Geometry of determinantal loci (BR).....	A-191
TICHINSKY, L. M.	
Boundary friction in bearings at low loads.....	A-109
Tests of a 7 by 10 ^{1/2} -in. bearing at 3600 rpm (D).....	162
Wear in lubrication problems.....	335
TIGER, HOWARD L.	
Carbonaceous zeolites—an advance in boiler-feedwater conditioning (D).....	159
TORSION	
Creep, elastic hysteresis, and damping in bakelite.....	A-79
TRANSFORMERS	
Noninflammable cooling medium used (D).....	289
TRANSLITE PIPE	
Modulus-of-elasticity, water hammer, pressure-time diagrams.....	451
TRANSMISSIONS	
Sekely variable-speed.....	420
TREIBER, O. D.	
Five years' progress of oil and gas power (D).....	594

TUBES. <i>See also</i> Boiler Tubes, Steam Condensers.	
Effect of holes in bursting pressure of (D)	516
TUCKERMAN, L. B.	
Stress model of an airship structure (D).	A-33
TURBINE CYLINDER JOINTS	
Design of (D)	A-31
TURBINES. <i>See</i> Hydraulic Turbines, Steam Turbines.	
TURBOGENERATORS	
Effect of size on cost per kw.	274
Some applications of photoelasticity in turbine-generator design.	A-151
TURBULENCE. <i>See</i> Flow of Liquids.	
TUVE, G. L.	
Income versus production (D)	48
V	
VALVES	
C.I. gate, test to destruction (D)	174
Design of flanged joints for valve bonnets (D)	71
High-temperature steam experience	383
Hydraulic check	450
Hydraulic emergency shutoff (D). Effect of operation after pipe failure (D)	75
Hydraulic relief	13, (D) 451
On pumping lines of Colorado River Aqueduct	121
Steam-pressure reducers	278
VAN BRUNT, JOHN	
Design of high-capacity boilers (D)	163
VAN DUZER, R. M., JR.	
High-temperature-steam experience at Detroit	383
VECTORSCOPE	403
VENTRES, L. H.	
Atomization of oil by small pressure-atomizing nozzles	373
VENTURI METERS. <i>See</i> Fluid Meters.	
VIBRATION. <i>See also</i> Water Hammer.	
Analysis of, with the Vectorscope	403
Book review	A-93
Crankshaft, balancing machine A-1, (D) A-131	
Design data on	A-86, A-127
Dynamic balance coefficient	34, (D) 460
Elastic engine supports	31, (D) 460
Engine unbalance for various crank arrangements	34, (D) 460
Geometric interpretations of the method of successive approximations (D)	A-33
Mathematical-machine determination of the vibration of accelerated unbalanced rotor	A-145
Resonance curves for nonharmonic vibrations in structures (D)	A-91
Resonance in pressure conduits	109
Rotor-unbalance determination, A-1, (D) A-131	
Systems with rotary inertia (D)	A-36
Theory of elastic engine supports 31, (D) 460	
Torsional, in bakeshelf	A-79
Unbalanced locomotive driving wheels	A-177
Vibration problems in engineering (BR)	A-94
VIGNE, ALBERT	
Oil-bath-lubricated railway bearing (D)	271
VINCENT, H. S.	
Drafting of steam locomotives (D)	455
VON KÁRMÁN, TH.	
Analogy between fluid friction and heat transfer	705
VROOM, R. C.	
Combination oil-and-gas burners (D)	267
Power and steam plants for oil-refinery service (D)	739
W	
WAGNER, WALTER C.	
Application of temperature controllers (D)	363
WAHL, A. M.	
Analysis of effect of wire curvature on allowable stresses in helical springs	A-25, (D) A-188
Die Federn—Ihr Gestaltung und Berechnung (BR)	A-48
Stresses in helical compression springs (D)	648
Transverse deflection of helical springs (D)	630
WARDEN, H. M.	
Oil-bath-lubricated railway bearing (D)	270
WARREN, G. B.	
High-temperature-steam experience (D)	400
Power and steam plants for oil-refinery service (D)	739
WATER	
Relation of pH value to temperature	287
WATER COOLERS. <i>See also</i> Cooling Towers. Evaporative-radiator type	29, (D) 452
WATER HAMMER	
Air chambers for discharge pipes (D)	445
Analysis of, in a pumping plant of the Colorado River Aqueduct	117
Operation of emergency shutoff valves in pipe lines (D)	75
Remedies for, in pumping systems 5, (D)	450
Special valves for	450
Resurge phase of (D)	440
Speed of pressure wave in Transite pipe	11, (D) 451
Theory of resonance in pressure conduits	109
WATER TREATMENT. <i>See also</i> Boiler Corrosion, Feedwater Treatment.	
Chlorination of condenser cooling water (D)	651
WATERS, E. O.	
Determination of the expansion forces in piping by model test (D)	A-187
Flanged joints for valve bonnets (D)	73
Tests of heat-exchanger flanges (D)	78
WATSON, R. M.	
Cavitation characteristics of centrifugal pump described by similarity considerations	17
WEAR	
In lubrication problems	335
Indentation method of measuring (D)	344
Methods and equipment for determining resistance to wear, tests	335
Resistance to, of heat-treated steels	340
WEBB, R. D.	
Pressure-type thermometer systems (D)	357
WEDGES	
Theory of	A-124
WELDED PIPING JOINTS	
Methods, tests, stresses (D)	167
WELDING	
Gun rupture due to	191
WELDING FITTINGS	
For piping, tests (D)	167
WELLANDER, H. H.	
Combination oil-and-gas burners (D)	267
WELLER, R.	
Calculation of stresses within the boundary of photoelastic models	A-71
WERTHEIM, F. E.	
Stresses in welded pipe connection (D)	175
WESTERGAARD, H. M.	
Bearing pressures and cracks	A-49
WHITE, ALBERT E.	
Changes in a high-pressure drum to eliminate recurrence of cracks due to corrosion fatigue	507
High-temperature-steam experience (D)	400
WHITE, W. M.	
Errors of pitot tubes (D)	503
WIEBUSCH, C. F.	
Spring clutch	A-103
WILBUR, JOHN B.	
Statically indeterminate frameworks (BR)	A-40
WILKINSON, P. H.	
Five years' progress of oil and gas power (D)	593
WILLIAMS, F. S. G.	
Stresses in a welded pipe connection (D)	175
WILSON, A. L.	
Burning various types of oil-refinery fuels	699
WINLOCK, JOSEPH	
Some observations on the yield point of low-carbon steel	581
Yielding of mild steel (D)	A-90
WINTERHOLD, W. H.	
Balancing reciprocating weights in steam locomotives (D)	536
WISLICENUS, G. F.	
Cavitation characteristics of centrifugal pump described by similarity considerations	17
WITHINGTON, SIDNEY	
Motive-power characteristics and light-weight equipment (railroads) (D)	437
WOHNBERG, W. J.	
Boiler furnaces (D)	574
Energy distribution in the pulverized-coal furnace, addenda and corrections	263
WOOD	
Elastic theory of wood failure	259
Specific gravity of	140
WOOD, E. A.	
Lignite—a grate-fired fuel of the future in the Southwest (D)	663
WOOD, W. D.	
Application of automatic control to continuous processes (D)	358
WOODWORKING	
Experiments in planing hardwoods	139
WOODWORKING MACHINERY	
Index of orders received	146, (D) 464
Obsolescence in	145, (D) 464
WOOLEN INDUSTRY. <i>See</i> Textiles.	
WOOLRICH, W. R.	
Lignite—a grate-fired fuel of the future in the Southwest (D)	663
WORK STRENGTHENING. <i>See</i> Strength of Materials.	
WORSTED INDUSTRY. <i>See</i> Textiles.	
WYLIE, C. R., JR.	
Numerical and graphical method of solving two-dimensional stress problems	A-63
Y	
YATES, H. G.	
Reheat factors for expansions of superheated and wet steam (D)	A-143
YELLOWOTT, J. I.	
Friction coefficients for compressible flow of steam (D)	A-135
YERZLEY, F. L.	
Mechanical characteristics of rubber (D)	463
Theory of elastic engine supports (D)	461
YOUNG, DANA	
Clamped rectangular plates with central concentrated load	A-114
YOUNG, E. G.	
Balancing reciprocating weights in steam locomotives (D)	537
Drafting of steam locomotives (D)	453
Z	
ZENER, C.	
Method of calculating energy losses during impact	A-67
ZEOLITES	
Feedwater conditioning (D)	159
ZUCROW, M. J.	
Application of automatic control to continuous processes (D)	359
Application of temperature controllers (D)	364
Automatic control in the oil industry (D)	350